

# SEQUENCE LISTING

<110> AVENTIS PHARMA S.A.

CNRS

INSERM

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<170> PatentIn version 3.1

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Ala Cys Arg Glu Leu Ala Tyr Phe Phe Thr Thr Gly Ile Val Val Ser  
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Lys Val Tyr Asp Pro Glu Gln Arg Lys Arg Met Ile Thr Gly Pro Gln  
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Ala Cys Arg Glu Leu Ala Tyr Phe Phe Thr Thr Gly Ile Val Val Ser  
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Ala Phe Gly Phe Pro Val Ile Leu Ala Arg Val Ala Val Ile Lys Trp  
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Gly Ala Cys Gly Leu Val Leu Ala Gly Asn Ala Val Ile Phe Leu Thr  
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Trp Trp Ala Arg Cys Lys Gln Met Asn Val Leu Asp Ser Phe Ile Asn  
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Tyr Tyr Asp Ser Glu Lys His Ala Glu Asn Ala Val Ile Phe Leu His  
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 Ser Gly Lys Ser Gly Asn Gly Ser Tyr Arg Leu Leu Asp His Tyr Lys  
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Ile	Met	Ala	Asp	Lys	Gln	Lys	Asn	Gly	Ile	Lys	Val	Asn	Phe	Lys	Ile	
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cgc	cac	aac	atc	gag	gac	ggc	agc	gtg	cag	ctc	gcc	gac	cac	tac	cag	960
Arg	His	Asn	Ile	Glu	Asp	Gly	Ser	Val	Gln	Leu	Ala	Asp	His	Tyr	Gln	
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Gln	Asn	Thr	Pro	Ile	Gly	Asp	Gly	Pro	Val	Leu	Leu	Pro	Asp	Asn	His	
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His Phe Ile Ala Lys Arg val Thr Tyr Asp Ser Asp Ala Thr Ser Ser  
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Ala Cys Arg Glu Leu Ala Tyr Phe Phe Thr Thr Gly Ile val val Ser  
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Ala Phe Gly Phe Pro val Ile Leu Ala Arg val Ala val Ile Lys Trp  
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Gly Ala Cys Gly Leu val Leu Ala Gly Asn Ala val Ile Phe Leu Thr  
 100 105 110

Ile Gln Gly Phe Phe Leu Ile Phe Gly Arg Gly Asp Asp Phe Ser Trp  
 115 120 125

Glu Gln Trp Ile Pro val Ala Thr Met Val Ser Lys Gly Glu Glu Leu  
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Phe Thr Gly val val Pro Ile Leu val Glu Leu Asp Gly Asp val Asn  
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Gly His Lys Phe Ser val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr  
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 Met Pro Glu Gly Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp  
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 Gly Asn Tyr Lys Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu  
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cct cta atg tca gtt cag ccc ata aat atg gtg aag cct gat cca cca Pro Leu Met Ser Val Gln Pro Ile Asn Met Val Lys Pro Asp Pro Pro 225 230 235 240	720
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Trp Ser Ser Pro Pro Leu Val Pro Phe Pro Leu Gln Tyr Gln Val Lys	
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Ile Tyr Lys Lys Glu Asn Lys Ile Val Pro Ser Lys Glu Ile Val Trp	
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Asn Ile Ser Cys Glu Thr Asp Gly Tyr Leu Thr Lys Met Thr Cys Arg	
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Trp Ser Thr Ser Thr Ile Gln Ser Leu Ala Glu Ser Thr Leu Gln Leu	
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Arg Tyr His Arg Ser Ser Leu Tyr Cys Ser Asp Ile Pro Ser Ile His	
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Pro Ile Ser Glu Pro Lys Asp Cys Tyr Leu Gln Ser Asp Gly Phe Tyr	
485 490 495	
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Glu Cys Ile Phe Gln Pro Ile Phe Leu Leu Ser Gly Tyr Thr Met Trp	
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Ile Arg Ile Asn His Ser Leu Gly Ser Leu Asp Ser Pro Pro Thr Cys	
515 520 525	
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Ala	Glu	Ile	Thr	Ile	Asn	Ile	Gly	Leu	Leu	Lys	Ile	Ser	Trp	Glu	Lys	
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Pro	Val	Phe	Pro	Glu	Asn	Asn	Leu	Gln	Phe	Gln	Ile	Arg	Tyr	Gly	Leu	
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Ser	Lys	Ser	Val	Ser	Leu	Pro	Val	Pro	Asp	Leu	Cys	Ala	Val	Tyr	Ala	
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Val	Gln	Val	Arg	Cys	Lys	Arg	Leu	Asp	Gly	Leu	Gly	Tyr	Trp	Ser	Asn	
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Trp	Ser	Asn	Pro	Ala	Tyr	Thr	Val	Val	Met	Asp	Ile	Lys	Val	Pro	Met	
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Trp	Thr	Glu	Gln	Ala	His	Thr	Val	Thr	Val	Leu	Ala	Ile	Asn	Ser	Ile	
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Lys	Val	Asn	Ile	Val	Gln	Ser	Leu	Ser	Ala	Tyr	Pro	Leu	Asn	Ser	Ser	
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Trp	Leu	Arg	Ile	Ser	Ser	Ser	Val	Lys	Lys	Tyr	Tyr	Ile	His	Asp	His	
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Gln Lys Gly Ser Phe Gln Met Val His Cys Asn Cys Ser Val His Glu  
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Pro Leu Met Ser Val Gln Pro Ile Asn Met Val Lys Pro Asp Pro Pro  
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Leu Gly Leu His Met Glu Ile Thr Asp Asp Gly Asn Leu Lys Ile Ser  
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Tyr Ser Glu Asn Ser Thr Thr Val Ile Arg Glu Ala Asp Lys Ile Val  
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Ser Ala Thr Ser Leu Leu Val Asp Ser Ile Leu Pro Gly Ser Ser Tyr  
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Asp Trp Ser Thr Pro Arg Val Phe Thr Thr Gln Asp Val Ile Tyr Phe  
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Pro Pro Lys Ile Leu Thr Ser Val Gly Ser Asn Val Ser Phe His Cys  
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Ile Tyr Lys Lys Glu Asn Lys Ile Val Pro Ser Lys Glu Ile Val Trp  
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Trp Met Asn Leu Ala Glu Lys Ile Pro Gln Ser Gln Tyr Asp Val Val  
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Ser Asp His Val Ser Lys Val Thr Phe Phe Asn Leu Asn Glu Thr Lys  
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Pro Arg Gly Lys Phe Thr Tyr Asp Ala Val Tyr Cys Cys Asn Glu His  
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 Glu Cys His His Arg Tyr Ala Glu Leu Tyr Val Ile Asp Val Asn Ile  
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 Gly Thr Trp Ser Glu Asp Val Gly Asn His Thr Lys Phe Thr Phe Leu  
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Asp Tyr Phe Leu Leu Pro Ala Gly Leu Ser Lys Asn Thr Ser Asn Ser		
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Asn Gly His Tyr Glu Thr Ala Val Glu Pro Lys Phe Asn Ser Ser Gly		
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Thr His Phe Ser Asn Leu Ser Lys Thr Thr Phe His Cys Cys Phe Arg		
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Ser Glu Gln Asp Arg Asn Cys Ser Leu Cys Ala Asp Asn Ile Glu Gly		
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Thr Thr Phe Val Ser Thr Val Asn Ser Leu Val Phe Phe Gln Gln Ile Asp		
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Ala Asn Trp Asn Ile Gln Cys Trp Leu Lys Gly Asp Leu Lys Leu Phe		
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Ile Cys Tyr Val Glu Ser Leu Phe Lys Asn Leu Phe Arg Asn Tyr Asn		
165 170 175		
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Pro	Leu	Val	Pro	Gln	Lys	Gly	Ser	Phe	Gln	Met	Val	His	Cys	Asn	Cys		
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Ser	Val	His	Glu	Cys	Cys	Glu	Cys	Leu	Val	Pro	Val	Pro	Thr	Ala	Lys		
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Ile	Phe	Arg	Ser	Pro	Leu	Met	Ser	Val	Gln	Pro	Ile	Asn	Met	Val	Lys		
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cct	gat	cca	cca	tta	ggt	ttg	cat	atg	gaa	atc	aca	gat	gat	ggt	aat		816
Pro	Asp	Pro	Pro	Leu	Gly	Leu	His	Met	Glu	Ile	Thr	Asp	Asp	Gly	Asn		
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Leu	Lys	Ile	Ser	Trp	Ser	Ser	Pro	Pro	Leu	Val	Pro	Phe	Pro	Leu	Gln		
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Gly	Ser	Ser	Tyr	Glu	Val	Gln	Val	Arg	Gly	Lys	Arg	Leu	Asp	Gly	Pro		
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Gly	Ile	Trp	Ser	Asp	Trp	Ser	Thr	Pro	Arg	Val	Phe	Thr	Thr	Gln	Asp		
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Ser	Phe	His	Cys	Ile	Tyr	Lys	Lys	Glu	Asn	Lys	Ile	Val	Pro	Ser	Lys		
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Glu	Ile	Val	Trp	Trp	Met	Asn	Leu	Ala	Glu	Lys	Ile	Pro	Gln	Ser	Gln		
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Tyr	Asp	Val	Val	Ser	Asp	His	Val	Ser	Lys	Val	Thr	Phe	Phe	Asn	Leu		
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Cys	Asn	Glu	His	Glu	Cys	His	His	Arg	Tyr	Ala	Glu	Leu	Tyr	Val	Ile		
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Phe Thr Phe Leu Trp Thr Glu Gln Ala His Thr Val Thr Val Leu Ala	
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Ile Asn Ser Ile Gly Ala Ser Val Ala Asn Phe Asn Leu Thr Phe Ser	
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Trp Pro Met Ser Lys Val Asn Ile Val Gln Ser Leu Ser Ala Tyr Pro	
755 760 765	
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Ile His Asp His Phe Ile Pro Ile Glu Lys Tyr Gln Phe Ser Leu Tyr	
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Ile Val Pro Val Ile Ile Ser Ser Ser Ile Leu Leu Leu Gly Thr Leu	
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ggc Gly	aag Lys 1220	tac Tyr	atc Ile	aag Lys	agc Ser	ttc Phe 1225	gtg Val	gag Glu	aga Arg	gtg Val	ctg Leu 1230	aag Lys	aac Asn	gag Glu		3699
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Asn Gly His Tyr Glu Thr Ala Val Glu Pro Lys Phe Asn Ser Ser Gly  
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Ser Glu Gln Asp Arg Asn Cys Ser Leu Cys Ala Asp Asn Ile Glu Gly  
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Ala Asn Trp Asn Ile Gln Cys Trp Leu Lys Gly Asp Leu Lys Leu Phe  
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Ile Cys Tyr Val Glu Ser Leu Phe Lys Asn Leu Phe Arg Asn Tyr Asn  
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Tyr Lys Val His Leu Leu Tyr Val Leu Pro Glu Val Leu Glu Asp Ser  
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Pro Leu Val Pro Gln Lys Gly Ser Phe Gln Met Val His Cys Asn Cys  
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 Ser Val His Glu Cys Cys Glu Cys Leu Val Pro Val Pro Thr Ala Lys  
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 Ile Phe Arg Ser Pro Leu Met Ser Val Gln Pro Ile Asn Met Val Lys  
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 Tyr Gln Val Lys Tyr Ser Glu Asn Ser Thr Thr Val Ile Arg Glu Ala  
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 325 330 335  
 Gly Ile Trp Ser Asp Trp Ser Thr Pro Arg Val Phe Thr Thr Gln Asp  
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 Cys Asn Glu His Glu Cys His His Arg Tyr Ala Glu Leu Tyr Val Ile  
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 Thr Ser Cys Asn Gly Thr Trp Ser Glu Asp Val Gly Asn His Thr Lys  
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Gln Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Thr Arg Tyr Pro Ile		
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Asn Gly His Tyr Glu Thr Ala Val Glu Pro Lys Phe Asn Ser Ser Gly		
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Met	Thr	Cys	Arg	Trp	Ser	Thr	Ser	Thr	Ile	Gln	Ser	Leu	Ala	Glu	Ser		
	465				470					475					480		
act	ttg	caa	ttg	agg	tat	cat	agg	agc	agc	ctt	tac	tgt	tct	gat	att	1488	
Thr	Leu	Gln	Leu	Arg	Tyr	His	Arg	Ser	Ser	Leu	Tyr	Cys	Ser	Asp	Ile		
				485				490						495			
cca	tct	att	cat	ccc	ata	tct	gag	ccc	aaa	gat	tgc	tat	ttg	cag	agt	1536	
Pro	Ser	Ile	His	Pro	Ile	Ser	Glu	Pro	Lys	Asp	Cys	Tyr	Leu	Gln	Ser		
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gat	ggt	ttt	tat	gaa	tgc	att	ttc	cag	cca	atc	ttc	cta	tta	tct	ggc	1584	
Asp	Gly	Phe	Tyr	Glu	Cys	Ile	Phe	Gln	Pro	Ile	Phe	Leu	Leu	Ser	Gly		
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Pro	Pro	Thr	Cys	Val	Leu	Pro	Asp	Ser	Val	Val	Lys	Pro	Leu	Pro	Pro		
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tcc	agt	gtg	aaa	gca	gaa	att	act	ata	aac	att	gga	tta	ttg	aaa	ata	1728	
Ser	Ser	Val	Lys	Ala	Glu	Ile	Thr	Ile	Asn	Ile	Gly	Leu	Leu	Lys	Ile		
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tct	tgg	gaa	aag	cca	gtc	ttt	cca	gag	aat	aac	ctt	caa	ttc	cag	att	1776	
Ser	Trp	Glu	Lys	Pro	Val	Phe	Pro	Glu	Asn	Asn	Leu	Gln	Phe	Gln	Ile		
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cgc	tat	ggt	tta	agt	gga	aaa	gaa	gta	caa	tgg	aag	atg	tat	gag	gtt	1824	
Arg	Tyr	Gly	Leu	Ser	Gly	Lys	Glu	Val	Gln	Trp	Lys	Met	Tyr	Glu	Val		
		595				600					605						
tat	gat	gca	aaa	tca	aaa	tct	gtc	agt	ctc	cca	gtt	cca	gac	ttg	tgt	1872	
Tyr	Asp	Ala	Lys	Ser	Lys	Ser	Val	Ser	Leu	Pro	Val	Pro	Asp	Leu	Cys		
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gca	gtc	tat	gct	gtt	cag	gtg	cgc	tgt	aag	agg	cta	gat	gga	ctg	gga	1920	
Ala	Val	Tyr	Ala	Val	Gln	Val	Arg	Cys	Lys	Arg	Leu	Asp	Gly	Leu	Gly		
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tat	tgg	agt	aat	tgg	agc	aat	cca	gcc	tac	aca	gtt	gtc	atg	gat	ata	1968	
Tyr	Trp	Ser	Asn	Trp	Ser	Asn	Pro	Ala	Tyr	Thr	Val	Val	Met	Asp	Ile		
				645				650					655				
aaa	gtt	cct	atg	aga	gga	cct	gaa	ttt	tgg	aga	ata	att	aat	gga	gat	2016	
Lys	Val	Pro	Met	Arg	Gly	Pro	Glu	Phe	Trp	Arg	Ile	Ile	Asn	Gly	Asp		
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act	atg	aaa	aag	gag	aaa	aat	gtc	act	tta	ctt	tgg	aag	ccc	ctg	atg	2064	
Thr	Met	Lys	Lys	Glu	Lys	Asn	Val	Thr	Leu	Leu	Trp	Lys	Pro	Leu	Met		
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aaa	aat	gac	tca	ttg	tgc	agt	gtt	cag	aga	tat	gtg	ata	aac	cat	cat	2112	

Lys	Asn	Asp	Ser	Leu	Cys	Ser	Val	Gln	Arg	Tyr	Val	Ile	Asn	His	His	
690						695					700					
act	tcc	tgc	aat	gga	aca	tgg	tca	gaa	gat	gtg	gga	aat	cac	acg	aaa	2160
Thr	Ser	Cys	Asn	Gly	Thr	Trp	Ser	Glu	Asp	Val	Gly	Asn	His	Thr	Lys	
705				710						715					720	
ttc	act	ttc	ctg	tgg	aca	gag	caa	gca	cat	act	gtt	acg	gtt	ctg	gcc	2208
Phe	Thr	Phe	Leu	Trp	Thr	Glu	Gln	Ala	His	Thr	Val	Thr	Val	Leu	Ala	
				725					730					735		
atc	aat	tca	att	ggt	gct	tct	gtt	gca	aat	ttt	aat	tta	acc	ttt	tca	2256
Ile	Asn	Ser	Ile	Gly	Ala	Ser	Val	Ala	Asn	Phe	Asn	Leu	Thr	Phe	Ser	
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Trp	Pro	Met	Ser	Lys	Val	Asn	Ile	Val	Gln	Ser	Leu	Ser	Ala	Tyr	Pro	
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785					790					795				800		
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Gly	Glu	Ile	Lys	Trp	Leu	Arg	Ile	Ser	Ser	Ser	Val	Lys	Lys	Tyr	Tyr	
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atc	cat	gat	cat	ttt	atc	ccc	att	gag	aag	tac	cag	ttc	agt	ctt	tac	2496
Ile	His	Asp	His	Phe	Ile	Pro	Ile	Glu	Lys	Tyr	Gln	Phe	Ser	Leu	Tyr	
			820					825					830			
cca	ata	ttt	atg	gaa	gga	gtg	gga	aaa	cca	aag	ata	att	aat	agt	ttc	2544
Pro	Ile	Phe	Met	Glu	Gly	Val	Gly	Lys	Pro	Lys	Ile	Ile	Asn	Ser	Phe	
		835					840					845				
act	caa	gat	gat	att	gaa	aaa	cac	cag	agt	gat	gca	ggt	tta	tat	gta	2592
Thr	Gln	Asp	Asp	Ile	Glu	Lys	His	Gln	Ser	Asp	Ala	Gly	Leu	Tyr	Val	
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att	gtg	cca	gta	att	att	tcc	tct	tcc	atc	tta	ttg	ctt	gga	aca	tta	2640
Ile	Val	Pro	Val	Ile	Ile	Ser	Ser	Ser	Ile	Leu	Leu	Leu	Gly	Thr	Leu	
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Leu	Ile	Ser	His	Gln	Arg	Met	Lys	Lys	Leu	Phe	Trp	Glu	Asp	Val	Pro	
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aac	ccc	aag	aat	tgt	tcc	tgg	gca	caa	gga	ctt	aat	ttt	cag	aag	aga	2736
Asn	Pro	Lys	Asn	Cys	Ser	Trp	Ala	Gln	Gly	Leu	Asn	Phe	Gln	Lys	Arg	
			900					905					910			
acg	gac	att	ctg	gat	cca	ccg	gtc	gcc	acc	atg	gtg	agc	aag	ggc	gag	2784
Thr	Asp	Ile	Leu	Asp	Pro	Pro	Val	Ala	Thr	Met	Val	Ser	Lys	Gly	Glu	
		915					920					925				
gag	ctg	ttc	acc	ggg	gtg	gtg	ccc	atc	ctg	gtc	gag	ctg	gac	ggc	gac	2832
Glu	Leu	Phe	Thr	Gly	Val	Val	Pro	Ile	Leu	Val	Glu	Leu	Asp	Gly	Asp	
	930					935					940					
gta	aac	ggc	cac	aag	ttc	agc	gtg	tcc	ggc	gag	ggc	gag	ggc	gat	gcc	2880
Val	Asn	Gly	His	Lys	Phe	Ser	Val	Ser	Gly	Glu	Gly	Glu	Gly	Asp	Ala	
945					950					955					960	
acc	tac	ggc	aag	ctg	acc	ctg	aag	ttc	atc	tgc	acc	acc	ggc	aag	ctg	2928



Thr	Tyr	Gly	Lys	Leu	Thr	Leu	Lys	Phe	Ile	Cys	Thr	Thr	Gly	Lys	Leu	
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ccc	gtg	ccc	tgg	ccc	acc	ctc	gtg	acc	acc	ttc	ggc	tac	ggc	gtg	cag	2976
Pro	Val	Pro	Trp	Pro	Thr	Leu	Val	Thr	Thr	Phe	Gly	Tyr	Gly	Val	Gln	
			980					985					990			
tgc	ttc	gcc	cgc	tac	ccc	gac	cac	atg	cgc	cag	cac	gac	ttc	ttc	aag	3024
Cys	Phe	Ala	Arg	Tyr	Pro	Asp	His	Met	Arg	Gln	His	Asp	Phe	Phe	Lys	
		995				1000						1005				
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Ser	Ala	Met	Pro	Glu	Gly	Tyr	Val	Gln	Glu	Arg	Thr	Ile	Phe	Phe		
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aag	gac	gac	ggc	aac	tac	aag	acc	cgc	gcc	gag	gtg	aag	ttc	gag		3114
Lys	Asp	Asp	Gly	Asn	Tyr	Lys	Thr	Arg	Ala	Glu	Val	Lys	Phe	Glu		
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ggc	gac	acc	ctg	gtg	aac	cgc	atc	gag	ctg	aag	ggc	atc	gac	ttc		3159
Gly	Asp	Thr	Leu	Val	Asn	Arg	Ile	Glu	Leu	Lys	Gly	Ile	Asp	Phe		
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Lys	Glu	Asp	Gly	Asn	Ile	Leu	Gly	His	Lys	Leu	Glu	Tyr	Asn	Tyr		
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aac	agc	cac	aac	gtc	tat	atc	atg	gcc	gac	aag	cag	aag	aac	ggc		3249
Asn	Ser	His	Asn	Val	Tyr	Ile	Met	Ala	Asp	Lys	Gln	Lys	Asn	Gly		
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atc	aag	gtg	aac	ttc	aag	atc	cgc	cac	aac	atc	gag	gac	ggc	agc		3294
Ile	Lys	Val	Asn	Phe	Lys	Ile	Arg	His	Asn	Ile	Glu	Asp	Gly	Ser		
	1085					1090					1095					
gtg	cag	ctc	gcc	gac	cac	tac	cag	cag	aac	acc	ccc	atc	ggc	gac		3339
Val	Gln	Leu	Ala	Asp	His	Tyr	Gln	Gln	Asn	Thr	Pro	Ile	Gly	Asp		
	1100					1105					1110					
ggc	ccc	gtg	ctg	ctg	ccc	gac	aac	cac	tac	ctg	agc	tac	cag	tcc		3384
Gly	Pro	Val	Leu	Leu	Pro	Asp	Asn	His	Tyr	Leu	Ser	Tyr	Gln	Ser		
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gcc	ctg	agc	aaa	gac	ccc	aac	gag	aag	cgc	gat	cac	atg	gtc	ctg		3429
Ala	Leu	Ser	Lys	Asp	Pro	Asn	Glu	Lys	Arg	Asp	His	Met	Val	Leu		
	1130					1135					1140					
ctg	gag	ttc	gtg	acc	gcc	gcc	ggg	atc	act	ctc	ggc	atg	gac	gag		3474
Leu	Glu	Phe	Val	Thr	Ala	Ala	Gly	Ile	Thr	Leu	Gly	Met	Asp	Glu		
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Leu	Tyr	Lys														
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 Gln Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Thr Arg Tyr Pro Ile  
 35 40 45  
 Thr Pro Trp Arg Phe Lys Leu Ser Cys Met Pro Pro Asn Ser Thr Tyr  
 50 55 60  
 Asp Tyr Phe Leu Leu Pro Ala Gly Leu Ser Lys Asn Thr Ser Asn Ser  
 65 70 75 80  
 Asn Gly His Tyr Glu Thr Ala Val Glu Pro Lys Phe Asn Ser Ser Gly  
 85 90 95  
 Thr His Phe Ser Asn Leu Ser Lys Thr Thr Phe His Cys Cys Phe Arg  
 100 105 110  
 Ser Glu Gln Asp Arg Asn Cys Ser Leu Cys Ala Asp Asn Ile Glu Gly  
 115 120 125  
 Thr Thr Phe Val Ser Thr Val Asn Ser Leu Val Phe Gln Gln Ile Asp  
 130 135 140  
 Ala Asn Trp Asn Ile Gln Cys Trp Leu Lys Gly Asp Leu Lys Leu Phe  
 145 150 155 160  
 Ile Cys Tyr Val Glu Ser Leu Phe Lys Asn Leu Phe Arg Asn Tyr Asn  
 165 170 175  
 Tyr Lys Val His Leu Leu Tyr Val Leu Pro Glu Val Leu Glu Asp Ser  
 180 185 190  
 Pro Leu Val Pro Gln Lys Gly Ser Phe Gln Met Val His Cys Asn Cys  
 195 200 205  
 Ser Val His Glu Cys Cys Glu Cys Leu Val Pro Val Pro Thr Ala Lys  
 210 215 220  
 Leu Asn Asp Thr Leu Leu Met Cys Leu Lys Ile Thr Ser Gly Gly Val  
 225 230 235 240

Ile Phe Arg Ser Pro Leu Met Ser Val Gln Pro Ile Asn Met Val Lys  
 245 250 255  
 Pro Asp Pro Pro Leu Gly Leu His Met Glu Ile Thr Asp Asp Gly Asn  
 260 265 270  
 Leu Lys Ile Ser Trp Ser Ser Pro Pro Leu Val Pro Phe Pro Leu Gln  
 275 280 285  
 Tyr Gln Val Lys Tyr Ser Glu Asn Ser Thr Thr Val Ile Arg Glu Ala  
 290 295 300  
 Asp Lys Ile Val Ser Ala Thr Ser Leu Leu Val Asp Ser Ile Leu Pro  
 305 310 315 320  
 Gly Ser Ser Tyr Glu Val Gln Val Arg Gly Lys Arg Leu Asp Gly Pro  
 325 330 335  
 Gly Ile Trp Ser Asp Trp Ser Thr Pro Arg Val Phe Thr Thr Gln Asp  
 340 345 350  
 Val Ile Tyr Phe Pro Pro Lys Ile Leu Thr Ser Val Gly Ser Asn Val  
 355 360 365  
 Ser Phe His Cys Ile Tyr Lys Lys Glu Asn Lys Ile Val Pro Ser Lys  
 370 375 380  
 Glu Ile Val Trp Trp Met Asn Leu Ala Glu Lys Ile Pro Gln Ser Gln  
 385 390 395 400  
 Tyr Asp Val Val Ser Asp His Val Ser Lys Val Thr Phe Phe Asn Leu  
 405 410 415  
 Asn Glu Thr Lys Pro Arg Gly Lys Phe Thr Tyr Asp Ala Val Tyr Cys  
 420 425 430  
 Cys Asn Glu His Glu Cys His His Arg Tyr Ala Glu Leu Tyr Val Ile  
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 Asp Val Asn Ile Asn Ile Ser Cys Glu Thr Asp Gly Tyr Leu Thr Lys  
 450 455 460  
 Met Thr Cys Arg Trp Ser Thr Ser Thr Ile Gln Ser Leu Ala Glu Ser  
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 Thr Leu Gln Leu Arg Tyr His Arg Ser Ser Leu Tyr Cys Ser Asp Ile  
 485 490 495  
 Pro Ser Ile His Pro Ile Ser Glu Pro Lys Asp Cys Tyr Leu Gln Ser  
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Asp Gly Phe Tyr Glu Cys Ile Phe Gln Pro Ile Phe Leu Leu Ser Gly  
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Tyr Thr Met Trp Ile Arg Ile Asn His Ser Leu Gly Ser Leu Asp Ser  
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Pro Pro Thr Cys Val Leu Pro Asp Ser Val Val Lys Pro Leu Pro Pro  
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Ser Ser Val Lys Ala Glu Ile Thr Ile Asn Ile Gly Leu Leu Lys Ile  
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Ser Trp Glu Lys Pro Val Phe Pro Glu Asn Asn Leu Gln Phe Gln Ile  
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Arg Tyr Gly Leu Ser Gly Lys Glu Val Gln Trp Lys Met Tyr Glu Val  
 595 600 605

Tyr Asp Ala Lys Ser Lys Ser Val Ser Leu Pro Val Pro Asp Leu Cys  
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Ala Val Tyr Ala Val Gln Val Arg Cys Lys Arg Leu Asp Gly Leu Gly  
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Tyr Trp Ser Asn Trp Ser Asn Pro Ala Tyr Thr Val Val Met Asp Ile  
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Lys Val Pro Met Arg Gly Pro Glu Phe Trp Arg Ile Ile Asn Gly Asp  
 660 665 670

Thr Met Lys Lys Glu Lys Asn Val Thr Leu Leu Trp Lys Pro Leu Met  
 675 680 685

Lys Asn Asp Ser Leu Cys Ser Val Gln Arg Tyr Val Ile Asn His His  
 690 695 700

Thr Ser Cys Asn Gly Thr Trp Ser Glu Asp Val Gly Asn His Thr Lys  
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Phe Thr Phe Leu Trp Thr Glu Gln Ala His Thr Val Thr Val Leu Ala  
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Ile Asn Ser Ile Gly Ala Ser Val Ala Asn Phe Asn Leu Thr Phe Ser  
 740 745 750

Trp Pro Met Ser Lys Val Asn Ile Val Gln Ser Leu Ser Ala Tyr Pro  
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Leu Asn Ser Ser Cys Val Ile Val Ser Trp Ile Leu Ser Pro Ser Asp  
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Tyr Lys Leu Met Tyr Phe Ile Ile Glu Trp Lys Asn Leu Asn Glu Asp  
785 790 795 800  
Gly Glu Ile Lys Trp Leu Arg Ile Ser Ser Ser Val Lys Lys Tyr Tyr  
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Ile His Asp His Phe Ile Pro Ile Glu Lys Tyr Gln Phe Ser Leu Tyr  
820 825 830  
Pro Ile Phe Met Glu Gly Val Gly Lys Pro Lys Ile Ile Asn Ser Phe  
835 840 845  
Thr Gln Asp Asp Ile Glu Lys His Gln Ser Asp Ala Gly Leu Tyr Val  
850 855 860  
Ile Val Pro Val Ile Ile Ser Ser Ser Ile Leu Leu Leu Gly Thr Leu  
865 870 875 880  
Leu Ile Ser His Gln Arg Met Lys Lys Leu Phe Trp Glu Asp Val Pro  
885 890 895  
Asn Pro Lys Asn Cys Ser Trp Ala Gln Gly Leu Asn Phe Gln Lys Arg  
900 905 910  
Thr Asp Ile Leu Asp Pro Pro Val Ala Thr Met Val Ser Lys Gly Glu  
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Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val Glu Leu Asp Gly Asp  
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Val Asn Gly His Lys Phe Ser Val Ser Gly Glu Gly Glu Gly Asp Ala  
945 950 955 960  
Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu  
965 970 975  
Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe Gly Tyr Gly Val Gln  
980 985 990  
Cys Phe Ala Arg Tyr Pro Asp His Met Arg Gln His Asp Phe Phe Lys  
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Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg Thr Ile Phe Phe  
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Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val Lys Phe Glu  
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Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile Asp Phe  
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Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn Tyr  
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 Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly  
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 Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser  
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 Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp  
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 Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Tyr Gln Ser  
 1115 1120 1125  
 Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu  
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gga ctg atg ttt ttg atg ctt gga tgt gcc ctt cca ata tac aac aaa	96
Gly Leu Met Phe Leu Met Leu Gly Cys Ala Leu Pro Ile Tyr Asn Lys	
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tac tgg ccc ctc ttt gtt cta ttt ttt tac atc ctt tca cct att cca	144
Tyr Trp Pro Leu Phe Val Leu Phe Phe Tyr Ile Leu Ser Pro Ile Pro	
35 40 45	
tac tgc ata gca aga aga tta gtg gat gat aca gat gct atg agt aac	192

Tyr Cys Ile Ala Arg Arg Leu Val Asp Asp Thr Asp Ala Met Ser Asn  
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 Ala Cys Lys Glu Leu Ala Ile Phe Leu Thr Thr Gly Ile Val Val Ser  
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 gct ttt gga ctc cct att gta ttt gcc aga gca cat ctg att gag tgg 288  
 Ala Phe Gly Leu Pro Ile Val Phe Ala Arg Ala His Leu Ile Glu Trp  
 85 90 95  
 gga gct tgt gca ctt gtt ctc aca gga aac aca gtc atc ttt gca act 336  
 Gly Ala Cys Ala Leu Val Leu Thr Gly Asn Thr Val Ile Phe Ala Thr  
 100 105 110  
 ata cta ggc ttt ttc ttg gtc ttt gga agc aat gac gac ttc agc tgg 384  
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 Gln Gln Trp  
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 Tyr Cys Ile Ala Arg Arg Leu Val Asp Asp Thr Asp Ala Met Ser Asn  
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 Ala Cys Lys Glu Leu Ala Ile Phe Leu Thr Thr Gly Ile Val Val Ser  
 65 70 75 80  
 Ala Phe Gly Leu Pro Ile Val Phe Ala Arg Ala His Leu Ile Glu Trp  
 85 90 95  
 Gly Ala Cys Ala Leu Val Leu Thr Gly Asn Thr Val Ile Phe Ala Thr  
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Gly Leu Met Phe Leu Met Leu Gly Cys Ala Leu Pro Ile Tyr Asn Lys	
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tac tgg ccc ctc ttt gtt cta ttt ttt tac atc ctt tca cct att cca	144
Tyr-Trp-Pro-Leu Phe Val Leu Phe Phe Tyr Ile Leu Ser Pro Ile Pro	
35 40 45	
tac tgc ata gca aga aga tta gtg gat gat aca gat gct atg agt aac	192
Tyr Cys Ile Ala Arg Arg Leu Val Asp Asp Thr Asp Ala Met Ser Asn	
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Ala Cys Lys Glu Leu Ala Ile Phe Leu Thr Thr Gly Ile Val Val Ser	
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Ala Phe Gly Leu Pro Ile Val Phe Ala Arg Ala His Leu Ile Glu Trp	
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Gly Ala Cys Ala Leu Val Leu Thr Gly Asn Thr Val Ile Phe Ala Thr	
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ata cta ggc ttt ttc ttg gtc ttt gga agc aat gac gac ttc agc tgg	384
Ile Leu Gly Phe Phe Leu Val Phe Gly Ser Asn Asp Asp Phe Ser Trp	
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Gln Gln Trp Arg Pro Val Asp Pro Pro Ala Arg Ala Thr Met Thr Ser	
130 135 140	



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ggc Gly	aac Asn	gcc Ala 195	gct Ala	agc Ser	agc Ser	tac Tyr	ctg Leu 200	tgg Trp	agg Arg	cac His	gtg Val	gtg Val 205	ccc Pro	cac His	atc Ile	624
gag Glu 210	ccc Pro	gtg Val	gcc Ala	agg Arg	tgc Cys	atc Ile 215	atc Ile	ccc Pro	gat Asp	ctg Leu	atc Ile 220	ggc Gly	atg Met	ggc Gly	aag Lys	672
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gcc Ala 305	ctg Leu	atc Ile	aag Lys	agc Ser	gag Glu 310	gag Glu	ggc Gly	gag Glu	aag Lys	atg Met 315	gtg Val	ctg Leu	gag Glu	aac Asn	aac Asn 320	960
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Ile Leu Gly Phe Phe Leu Val Phe Gly Ser Asn Asp Asp Phe Ser Trp  
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Gln Gln Trp Arg Pro Val Asp Pro Pro Ala Arg Ala Thr Met Thr Ser  
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 Tyr Tyr Asp Ser Glu Lys His Ala Glu Asn Ala Val Ile Phe Leu His  
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 210 215 220  
 Ser Gly Lys Ser Gly Asn Gly Ser Tyr Arg Leu Leu Asp His Tyr Lys  
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Tyr Trp Pro Leu Phe Val Leu Phe Tyr Ile Leu Ser Pro Ile Pro	
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Tyr Cys Ile Ala Arg Arg Leu Val Asp Asp Thr Asp Ala Met Ser Asn	
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Ala Cys Lys Glu Leu Ala Ile Phe Leu Thr Thr Gly Ile Val Val Ser	
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Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile Asp Phe Lys	
260 265 270	
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Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn Tyr Asn Ser	
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Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val Gln Leu Ala	
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Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro Val Leu Leu	
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Pro Asp Asn His Tyr Leu Ser Tyr Gln Ser Ala Leu Ser Lys Asp Pro	
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Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu Gly Glu Gly  
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 Val Gln Cys Phe Ala Arg Tyr Pro Asp His Met Arg Gln His Asp Phe  
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 His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly Ile Lys Val  
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 Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val Gln Leu Ala  
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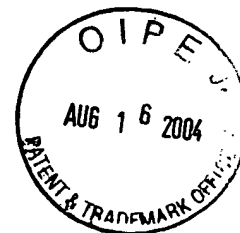
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<141> 2004-02-09

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<211> 20

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<213> Artificial Sequence

<220>

<223> AS14

<220>

<221> misc\_feature

<223> antisens AS14

<400> 2

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<211> 396

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(396)

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1 5 10 15

gga ctg act ttt ctt atg ctg gga tgt gcc tta gag gat tat ggc gtt 96  
Gly Leu Thr Phe Leu Met Leu Gly Cys Ala Leu Glu Asp Tyr Gly Val  
20 25 30

FRAV20030005 US NP Sequence Listing.txt

tac tgg ccc tta ttc gtc ctg att ttc cac gcc atc tcc ccc atc ccc 144  
Tyr Trp Pro Leu Phe Val Leu Ile Phe His Ala Ile Ser Pro Ile Pro  
35 40 45

cat ttc att gcc aaa aga gtc acc tat gac tca gat gca acc agt agt 192  
His Phe Ile Ala Lys Arg Val Thr Tyr Asp Ser Asp Ala Thr Ser Ser  
50 55 60

gcc tgt cgg gaa ctg gca tat ttc ttc act act gga att gtt gtt tct 240  
Ala Cys Arg Glu Leu Ala Tyr Phe Phe Thr Thr Gly Ile Val Val Ser  
65 70 75 80

gcc ttt gga ttt cct gtt att ctt gct cgt gtg gct gtg atc aaa tgg 288  
Ala Phe Gly Phe Pro Val Ile Leu Ala Arg Val Ala Val Ile Lys Trp  
85 90 95

gga gcc tgc gcc ctt gtg ttg gca gcc aat gca gtc att ttc ctt aca 336  
Gly Ala Cys Gly Leu Val Leu Ala Gly Asn Ala Val Ile Phe Leu Thr  
100 105 110

att caa ggg ttt ttc ctt ata ttt gga aga gga gat gat ttt agc tgg 384  
Ile Gln Gly Phe Phe Leu Ile Phe Gly Arg Gly Asp Asp Phe Ser Trp  
115 120 125

gag cag tgg tag 396  
Glu Gln Trp  
130

<210> 4

<211> 131

<212> PRT

<213> Homo sapiens

<400> 4

Met Ala Gly Val Lys Ala Leu Val Ala Leu Ser Phe Ser Gly Ala Ile  
1 5 10 15

Gly Leu Thr Phe Leu Met Leu Gly Cys Ala Leu Glu Asp Tyr Gly Val  
20 25 30

Tyr Trp Pro Leu Phe Val Leu Ile Phe His Ala Ile Ser Pro Ile Pro  
35 40 45

His Phe Ile Ala Lys Arg Val Thr Tyr Asp Ser Asp Ala Thr Ser Ser  
50 55 60

Ala Cys Arg Glu Leu Ala Tyr Phe Phe Thr Thr Gly Ile Val Val Ser  
65 70 75 80

Ala Phe Gly Phe Pro Val Ile Leu Ala Arg Val Ala Val Ile Lys Trp  
85 90 95

FRAV20030005 US NP Sequence Listing.txt

Gly Ala Cys Gly Leu Val Leu Ala Gly Asn Ala Val Ile Phe Leu Thr  
 100 105 110

Ile Gln Gly Phe Phe Leu Ile Phe Gly Arg Gly Asp Asp Phe Ser Trp  
 115 120 125

Glu Gln Trp  
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<212> DNA

<213> Artificial Sequence

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<220>

<221> CDS

<222> (1)..(1359)

<223>

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 Met Ala Gly Val Lys Ala Leu Val Ala Leu Ser Phe Ser Gly Ala Ile  
 1 5 10 15

gga ctg act ttt ctt atg ctg gga tgt gcc tta gag gat tat ggc gtt 96  
 Gly Leu Thr Phe Leu Met Leu Gly Cys Ala Leu Glu Asp Tyr Gly Val  
 20 25 30

tac tgg ccc tta ttc gtc ctg att ttc cac gcc atc tcc ccc atc ccc 144  
 Tyr Trp Pro Leu Phe Val Leu Ile Phe His Ala Ile Ser Pro Ile Pro  
 35 40 45

cat ttc att gcc aaa aga gtc acc tat gac tca gat gca acc agt agt 192  
 His Phe Ile Ala Lys Arg Val Thr Tyr Asp Ser Asp Ala Thr Ser Ser  
 50 55 60

FRAV20030005 US NP Sequence Listing.txt

gcc tgt cgg gaa ctg gca tat ttc ttc act act gga att gtt gtt tct Ala Cys Arg Glu Leu Ala Tyr Phe Phe Thr Thr Gly Ile Val Val Ser 65 70 75 80	240
gcc ttt gga ttt cct gtt att ctt gct cgt gtg gct gtg atc aaa tgg Ala Phe Gly Phe Pro Val Ile Leu Ala Arg Val Ala Val Ile Lys Trp 85 90 95	288
gga gcc tgc ggc ctt gtg ttg gca ggc aat gca gtc att ttc ctt aca Gly Ala Cys Gly Leu Val Leu Ala Gly Asn Ala Val Ile Phe Leu Thr 100 105 110	336
att caa ggg ttt ttc ctt ata ttt gga aga gga gat gat ttt agc tgg Ile Gln Gly Phe Phe Leu Ile Phe Gly Arg Gly Asp Asp Phe Ser Trp 115 120 125	384
gag cag tgg att ccg ggg gat cca ccg gct aga gcc acc atg acc agc Glu Gln Trp Ile Pro Gly Asp Pro Pro Ala Arg Ala Thr Met Thr Ser 130 135 140	432
aag gtg tac gac ccc gag cag agg aag agg atg atc acc ggc ccc cag Lys Val Tyr Asp Pro Glu Gln Arg Lys Arg Met Ile Thr Gly Pro Gln 145 150 155 160	480
tgg tgg gcc agg tgc aag cag atg aac gtg ctg gac agc ttc atc aac Trp Trp Ala Arg Cys Lys Gln Met Asn Val Leu Asp Ser Phe Ile Asn 165 170 175	528
tac tac gac agc gag aag cac gcc gag aac gcc gtg atc ttc ctg cac Tyr Tyr Asp Ser Glu Lys His Ala Glu Asn Ala Val Ile Phe Leu His 180 185 190	576
ggc aac gcc gct agc agc tac ctg tgg agg cac gtg gtg ccc cac atc Gly Asn Ala Ala Ser Ser Tyr Leu Trp Arg His Val Val Pro His Ile 195 200 205	624
gag ccc gtg gcc agg tgc atc atc ccc gat ctg atc ggc atg ggc aag Glu Pro Val Ala Arg Cys Ile Ile Pro Asp Leu Ile Gly Met Gly Lys 210 215 220	672
agc ggc aag agc ggc aac ggc agc tac agg ctg ctg gac cac tac aag Ser Gly Lys Ser Gly Asn Gly Ser Tyr Arg Leu Leu Asp His Tyr Lys 225 230 235 240	720
tac ctg acc gcc tgg ttc gag ctc ctg aac ctg ccc aag aag atc atc Tyr Leu Thr Ala Trp Phe Glu Leu Leu Asn Leu Pro Lys Lys Ile Ile 245 250 255	768
ttc gtg ggc cac gac tgg ggc gcc tgc ctg gcc ttc cac tac agc tac Phe Val Gly His Asp Trp Gly Ala Cys Leu Ala Phe His Tyr Ser Tyr 260 265 270	816
gag cac cag gac aag atc aag gcc atc gtg cac gcc gag agc gtg gtg Glu His Gln Asp Lys Ile Lys Ala Ile Val His Ala Glu Ser Val Val 275 280 285	864
gac gtg atc gag agc tgg gac gag tgg cca gac atc gag gag gac atc Asp Val Ile Glu Ser Trp Asp Glu Trp Pro Asp Ile Glu Glu Asp Ile 290 295 300	912
gcc ctg atc aag agc gag gag ggc gag aag atg gtg ctg gag aac aac Ala Leu Ile Lys Ser Glu Glu Gly Glu Lys Met Val Leu Glu Asn Asn 305 310 315 320	960

FRAV20030005 US NP Sequence Listing.txt

ttc ttc gtg gag acc atg ctg ccc agc aag atc atg aga aag ctg gag Phe Phe Val Glu Thr Met Leu Pro Ser Lys Ile Met Arg Lys Leu Glu 325 330 335	1008
ccc gag gag ttc gcc gcc tac ctg gag ccc ttc aag gag aag ggc gag Pro Glu Glu Phe Ala Ala Tyr Leu Glu Pro Phe Lys Glu Lys Gly Glu 340 345 350	1056
gtg aga aga ccc acc ctg agc tgg ccc aga gag atc ccc ctg gtg aag Val Arg Arg Pro Thr Leu Ser Trp Pro Arg Glu Ile Pro Leu Val Lys 355 360 365	1104
ggc ggc aag ccc gac gtg gtg cag atc gtg aga aac tac aac gcc tac Gly Gly Lys Pro Asp Val Val Gln Ile Val Arg Asn Tyr Asn Ala Tyr 370 375 380	1152
ctg aga gcc agc gac gac ctg ccc aag atg ttc atc gag agc gac ccc Leu Arg Ala Ser Asp Asp Leu Pro Lys Met Phe Ile Glu Ser Asp Pro 385 390 395 400	1200
ggc ttc ttc agc aac gcc atc gtg gag ggc gcc aag aag ttc ccc aac Gly Phe Phe Ser Asn Ala Ile Val Glu Gly Ala Lys Lys Phe Pro Asn 405 410 415	1248
acc gag ttc gtg aag gtg aag ggc ctg cac ttc agc cag gag gac gcc Thr Glu Phe Val Lys Val Lys Gly Leu His Phe Ser Gln Glu Asp Ala 420 425 430	1296
ccc gac gag atg ggc aag tac atc aag agc ttc gtg gag aga gtg ctg Pro Asp Glu Met Gly Lys Tyr Ile Lys Ser Phe Val Glu Arg Val Leu 435 440 445	1344
aag aac gag cag taa Lys Asn Glu Gln 450	1359

<210> 6

<211> 452

<212> PRT

<213> Artificial Sequence

<220>

<223> OB RGRP LUC

<220>

<221> misc\_feature

<223> OB RGRP LUC

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Met Ala Gly Val Lys Ala Leu Val Ala Leu Ser Phe Ser Gly Ala Ile
1 5 10 15

FRAV20030005 US NP Sequence Listing.txt

Gly Leu Thr Phe Leu Met Leu Gly Cys Ala Leu Glu Asp Tyr Gly Val  
20 25 30

Tyr Trp Pro Leu Phe Val Leu Ile Phe His Ala Ile Ser Pro Ile Pro  
35 40 45

His Phe Ile Ala Lys Arg Val Thr Tyr Asp Ser Asp Ala Thr Ser Ser  
50 55 60

Ala Cys Arg Glu Leu Ala Tyr Phe Phe Thr Thr Gly Ile Val Val Ser  
65 70 75 80

Ala Phe Gly Phe Pro Val Ile Leu Ala Arg Val Ala Val Ile Lys Trp  
85 90 95

Gly Ala Cys Gly Leu Val Leu Ala Gly Asn Ala Val Ile Phe Leu Thr  
100 105 110

Ile Gln Gly Phe Phe Leu Ile Phe Gly Arg Gly Asp Asp Phe Ser Trp  
115 120 125

Glu Gln Trp Ile Pro Gly Asp Pro Pro Ala Arg Ala Thr Met Thr Ser  
130 135 140

Lys Val Tyr Asp Pro Glu Gln Arg Lys Arg Met Ile Thr Gly Pro Gln  
145 150 155 160

Trp Trp Ala Arg Cys Lys Gln Met Asn Val Leu Asp Ser Phe Ile Asn  
165 170 175

Tyr Tyr Asp Ser Glu Lys His Ala Glu Asn Ala Val Ile Phe Leu His  
180 185 190

Gly Asn Ala Ala Ser Ser Tyr Leu Trp Arg His Val Val Pro His Ile  
195 200 205

Glu Pro Val Ala Arg Cys Ile Ile Pro Asp Leu Ile Gly Met Gly Lys  
210 215 220

Ser Gly Lys Ser Gly Asn Gly Ser Tyr Arg Leu Leu Asp His Tyr Lys  
225 230 235 240

Tyr Leu Thr Ala Trp Phe Glu Leu Leu Asn Leu Pro Lys Lys Ile Ile  
245 250 255

Phe Val Gly His Asp Trp Gly Ala Cys Leu Ala Phe His Tyr Ser Tyr  
260 265 270

FRAV20030005 US NP Sequence Listing.txt

Glu His Gln Asp Lys Ile Lys Ala Ile Val His Ala Glu Ser Val Val  
275 280 285

Asp Val Ile Glu Ser Trp Asp Glu Trp Pro Asp Ile Glu Glu Asp Ile  
290 295 300

Ala Leu Ile Lys Ser Glu Glu Gly Glu Lys Met Val Leu Glu Asn Asn  
305 310 315 320

Phe Phe Val Glu Thr Met Leu Pro Ser Lys Ile Met Arg Lys Leu Glu  
325 330 335

Pro Glu Glu Phe Ala Ala Tyr Leu Glu Pro Phe Lys Glu Lys Gly Glu  
340 345 350

Val Arg Arg Pro Thr Leu Ser Trp Pro Arg Glu Ile Pro Leu Val Lys  
355 360 365

Gly Gly Lys Pro Asp Val Val Gln Ile Val Arg Asn Tyr Asn Ala Tyr  
370 375 380

Leu Arg Ala Ser Asp Asp Leu Pro Lys Met Phe Ile Glu Ser Asp Pro  
385 390 395 400

Gly Phe Phe Ser Asn Ala Ile Val Glu Gly Ala Lys Lys Phe Pro Asn  
405 410 415

Thr Glu Phe Val Lys Val Lys Gly Leu His Phe Ser Gln Glu Asp Ala  
420 425 430

Pro Asp Glu Met Gly Lys Tyr Ile Lys Ser Phe Val Glu Arg Val Leu  
435 440 445

Lys Asn Glu Gln  
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<210> 7

<211> 1128

<212> DNA

<213> Artificial Sequence

<220>

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FRAV20030005 US NP Sequence Listing.txt

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<223> OB RGRP YFP

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<222> (1)..(1128)

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gga ctg act ttt ctt atg ctg gga tgt gcc tta gag gat tat ggc gtt	96
Gly Leu Thr Phe Leu Met Leu Gly Cys Ala Leu Glu Asp Tyr Gly Val	
20 25 30	
tac tgg ccc tta ttc gtc ctg att ttc cac gcc atc tcc ccc atc ccc	144
Tyr Trp Pro Leu Phe Val Leu Ile Phe His Ala Ile Ser Pro Ile Pro	
35 40 45	
cat ttc att gcc aaa aga gtc acc tat gac tca gat gca acc agt agt	192
His Phe Ile Ala Lys Arg Val Thr Tyr Asp Ser Asp Ala Thr Ser Ser	
50 55 60	
gcc tgt cgg gaa ctg gca tat ttc ttc act act gga att gtt gtt tct	240
Ala Cys Arg Glu Leu Ala Tyr Phe Phe Thr Thr Gly Ile Val Val Ser	
65 70 75 80	
gcc ttt gga ttt cct gtt att ctt gct cgt gtg gct gtg atc aaa tgg	288
Ala Phe Gly Phe Pro Val Ile Leu Ala Arg Val Ala Val Ile Lys Trp	
85 90 95	
gga gcc tgc ggc ctt gtg ttg gca ggc aat gca gtc att ttc ctt aca	336
Gly Ala Cys Gly Leu Val Leu Ala Gly Asn Ala Val Ile Phe Leu Thr	
100 105 110	
att caa ggg ttt ttc ctt ata ttt gga aga gga gat gat ttt agc tgg	384
Ile Gln Gly Phe Phe Leu Ile Phe Gly Arg Gly Asp Asp Phe Ser Trp	
115 120 125	
gag cag tgg att ccg gtc gcc acc atg gtg agc aag ggc gag gag ctg	432
Glu Gln Trp Ile Pro Val Ala Thr Met Val Ser Lys Gly Glu Glu Leu	
130 135 140	
ttc acc ggg gtg gtg ccc atc ctg gtc gag ctg gac ggc gac gta aac	480
Phe Thr Gly Val Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn	
145 150 155 160	
ggc cac aag ttc agc gtg tcc ggc gag ggc gag ggc gat gcc acc tac	528
Gly His Lys Phe Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr	
165 170 175	



FRAV20030005 US NP Sequence Listing.txt

ggc aag ctg acc ctg aag ttc atc tgc acc acc ggc aag ctg ccc gtg Gly Lys Leu Thr Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val 180 185 190	576
ccc tgg ccc acc ctc gtg acc acc ttc ggc tac ggc gtg cag tgc ttc Pro Trp Pro Thr Leu Val Thr Thr Phe Gly Tyr Gly Val Gln Cys Phe 195 200 205	624
gcc cgc tac ccc gac cac atg cgc cag cac gac ttc ttc aag tcc gcc Ala Arg Tyr Pro Asp His Met Arg Gln His Asp Phe Phe Lys Ser Ala 210 215 220	672
atg ccc gaa ggc tac gtc cag gag cgc acc atc ttc ttc aag gac gac Met Pro Glu Gly Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp 225 230 235 240	720
ggc aac tac aag acc cgc gcc gag gtg aag ttc gag ggc gac acc ctg Gly Asn Tyr Lys Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu 245 250 255	768
gtg aac cgc atc gag ctg aag ggc atc gac ttc aag gag gac ggc aac Val Asn Arg Ile Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn 260 265 270	816
atc ctg ggg cac aag ctg gag tac aac tac aac agc cac aac gtc tat Ile Leu Gly His Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr 275 280 285	864
atc atg gcc gac aag cag aag aac ggc atc aag gtg aac ttc aag atc Ile Met Ala Asp Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile 290 295 300	912
cgc cac aac atc gag gac ggc agc gtg cag ctc gcc gac cac tac cag Arg His Asn Ile Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln 305 310 315 320	960
cag aac acc ccc atc ggc gac ggc ccc gtg ctg ctg ccc gac aac cac Gln Asn Thr Pro Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His 325 330 335	1008
tac ctg agc tac cag tcc gcc ctg agc aaa gac ccc aac gag aag cgc Tyr Leu Ser Tyr Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg 340 345 350	1056
gat cac atg gtc ctg ctg gag ttc gtg acc gcc gcc ggg atc act ctc Asp His Met Val Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr Leu 355 360 365	1104
ggc atg gac gag ctg tac aag taa Gly Met Asp Glu Leu Tyr Lys 370 375	1128

<210> 8

<211> 375

<212> PRT

<213> Artificial Sequence

FRAV20030005 US NP Sequence Listing.txt

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<223> OB RGRP YFP

<220>

<221> misc\_feature

<223> OB RGRP YFP

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1 5 10 15

Gly Leu Thr Phe Leu Met Leu Gly Cys Ala Leu Glu Asp Tyr Gly Val  
20 25 30

Tyr Trp Pro Leu Phe Val Leu Ile Phe His Ala Ile Ser Pro Ile Pro  
35 40 45

His Phe Ile Ala Lys Arg Val Thr Tyr Asp Ser Asp Ala Thr Ser Ser  
50 55 60

Ala Cys Arg Glu Leu Ala Tyr Phe Phe Thr Thr Gly Ile Val Val Ser  
65 70 75 80

Ala Phe Gly Phe Pro Val Ile Leu Ala Arg Val Ala Val Ile Lys Trp  
85 90 95

Gly Ala Cys Gly Leu Val Leu Ala Gly Asn Ala Val Ile Phe Leu Thr  
100 105 110

Ile Gln Gly Phe Phe Leu Ile Phe Gly Arg Gly Asp Asp Phe Ser Trp  
115 120 125

Glu Gln Trp Ile Pro Val Ala Thr Met Val Ser Lys Gly Glu Glu Leu  
130 135 140

Phe Thr Gly Val Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn  
145 150 155 160

Gly His Lys Phe Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr  
165 170 175

Gly Lys Leu Thr Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val  
180 185 190

Pro Trp Pro Thr Leu Val Thr Thr Phe Gly Tyr Gly Val Gln Cys Phe  
195 200 205

FRAV20030005 US NP Sequence Listing.txt

Ala Arg Tyr Pro Asp His Met Arg Gln His Asp Phe Phe Lys Ser Ala  
210 215 220

Met Pro Glu Gly Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp  
225 230 235 240

Gly Asn Tyr Lys Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu  
245 250 255

Val Asn Arg Ile Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn  
260 265 270

Ile Leu Gly His Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr  
275 280 285

Ile Met Ala Asp Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile  
290 295 300

Arg His Asn Ile Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln  
305 310 315 320

Gln Asn Thr Pro Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His  
325 330 335

Tyr Leu Ser Tyr Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg  
340 345 350

Asp His Met Val Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr Leu  
355 360 365

Gly Met Asp Glu Leu Tyr Lys  
370 375

<210> 9

<211> 2691

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(2691)

<223>

## FRAV20030005 US NP Sequence Listing.txt

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1 5 10 15

tat gtg ata act gcg ttt aac ttg tca tat cca att act cct tgg aga      96
Tyr Val Ile Thr Ala Phe Asn Leu Ser Tyr Pro Ile Thr Pro Trp Arg
20 25 30

ttt aag ttg tct tgc atg cca cca aat tca acc tat gac tac ttc ctt      144
Phe Lys Leu Ser Cys Met Pro Pro Asn Ser Thr Tyr Asp Tyr Phe Leu
35 40 45

ttg cct gct gga ctc tca aag aat act tca aat tcg aat gga cat tat      192
Leu Pro Ala Gly Leu Ser Lys Asn Thr Ser Asn Ser Asn Gly His Tyr
50 55 60

gag aca gct gtt gaa cct aag ttt aat tca agt ggt act cac ttt tct      240
Glu Thr Ala Val Glu Pro Lys Phe Asn Ser Ser Gly Thr His Phe Ser
65 70 75 80

aac tta tcc aaa aca act ttc cac tgt tgc ttt cgg agt gag caa gat      288
Asn Leu Ser Lys Thr Thr Phe His Cys Cys Phe Arg Ser Glu Gln Asp
85 90 95

aga aac tgc tcc tta tgt gca gac aac att gaa gga aag aca ttt gtt      336
Arg Asn Cys Ser Leu Cys Ala Asp Asn Ile Glu Gly Lys Thr Phe Val
100 105 110

tca aca gta aat tct tta gtt ttt caa caa ata gat gca aac tgg aac      384
Ser Thr Val Asn Ser Leu Val Phe Gln Gln Ile Asp Ala Asn Trp Asn
115 120 125

ata cag tgc tgg cta aaa gga gac tta aaa tta ttc atc tgt tat gtg      432
Ile Gln Cys Trp Leu Lys Gly Asp Leu Lys Leu Phe Ile Cys Tyr Val
130 135 140

gag tca tta ttt aag aat cta ttc agg aat tat aac tat aag gtc cat      480
Glu Ser Leu Phe Lys Asn Leu Phe Arg Asn Tyr Asn Tyr Lys Val His
145 150 155 160

ctt tta tat gtt ctg cct gaa gtg tta gaa gat tca cct ctg gtt ccc      528
Leu Leu Tyr Val Leu Pro Glu Val Leu Glu Asp Ser Pro Leu Val Pro
165 170 175

caa aaa ggc agt ttt cag atg gtt cac tgc aat tgc agt gtt cat gaa      576
Gln Lys Gly Ser Phe Gln Met Val His Cys Asn Cys Ser Val His Glu
180 185 190

tgt tgt gaa tgt ctt gtg cct gtg cca aca gcc aaa ctc aac gac act      624
Cys Cys Glu Cys Leu Val Pro Val Pro Thr Ala Lys Leu Asn Asp Thr
195 200 205

ctc ctt atg tgt ttg aaa atc aca tct ggt gga gta att ttc cag tca      672
Leu Leu Met Cys Leu Lys Ile Thr Ser Gly Gly Val Ile Phe Gln Ser
210 215 220

cct cta atg tca gtt cag ccc ata aat atg gtg aag cct gat cca cca      720
Pro Leu Met Ser Val Gln Pro Ile Asn Met Val Lys Pro Asp Pro Pro
225 230 235 240

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FRAV20030005 US NP Sequence Listing.txt

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tgg tcc agc cca cca ttg gta cca ttt cca ctt caa tat caa gtg aaa Trp Ser Ser Pro 260 Pro Leu Val Pro Phe 265 Pro Leu Gln Tyr Gln Val 270 Lys	816
tat tca gag aat tct aca aca gtt atc aga gaa gct gac aag att gtc Tyr Ser Glu Asn Ser Thr Thr Val 280 Ile Arg Glu Ala Asp 285 Lys Ile Val	864
tca gct aca tcc ctg cta gta gac agt ata ctt cct ggg tct tcg tat Ser Ala 290 Thr Ser Leu Leu Val 295 Asp Ser Ile Leu Pro 300 Gly Ser Ser Tyr	912
gag gtt cag gtg agg ggc aag aga ctg gat ggc cca gga atc tgg agt Glu Val Gln Val Arg Gly 310 Lys Arg Leu Asp Gly 315 Pro Gly Ile Trp Ser 320	960
gac tgg agt act cct cgt gtc ttt acc aca caa gat gtc ata tac ttt Asp Trp Ser Thr Pro 325 Arg Val Phe Thr Thr 330 Gln Asp Val Ile Tyr Phe 335	1008
cca cct aaa att ctg aca agt gtt ggg tct aat gtt tct ttt cac tgc Pro Pro Lys Ile 340 Leu Thr Ser Val Gly 345 Ser Asn Val Ser Phe 350 His Cys	1056
atc tat aag aag gaa aac aag att gtt ccc tca aaa gag att gtt tgg Ile Tyr Lys 355 Lys Glu Asn Lys Ile Val Pro Ser Lys Glu 365 Ile Val Trp	1104
tgg atg aat tta gct gag aaa att cct caa agc cag tat gat gtt gtg Trp Met 370 Asn Leu Ala Glu Lys 375 Ile Pro Gln Ser Gln Tyr Asp Val Val	1152
agt gat cat gtt agc aaa gtt act ttt ttc aat ctg aat gaa acc aaa Ser Asp His Val Ser Lys 390 Val Thr Phe Phe Asn Leu Asn Glu Thr Lys 400	1200
cct cga gga aag ttt acc tat gat gca gtg tac tgc tgc aat gaa cat Pro Arg Gly Lys Phe 405 Thr Tyr Asp Ala Val 410 Tyr Cys Cys Asn Glu 415 His	1248
gaa tgc cat cat cgc tat gct gaa tta tat gtg att gat gtc aat atc Glu Cys His His Arg Tyr Ala Glu Leu Tyr Val Ile Asp Val 430 Asn Ile	1296
aat atc tca tgt gaa act gat ggg tac tta act aaa atg act tgc aga Asn Ile Ser Cys Glu Thr Asp Gly Tyr Leu Thr Lys Met Thr Cys Arg	1344
tgg tca acc agt aca atc cag tca ctt gcg gaa agc act ttg caa ttg Trp Ser Thr Ser Thr Ile Gln 455 Ser Leu Ala Glu Ser Thr Leu Gln Leu	1392
agg tat cat agg agc agc ctt tac tgt tct gat att cca tct att cat Arg Tyr His Arg Ser Ser 470 Leu Tyr Cys Ser Asp Ile 475 Pro Ser Ile His 480	1440
ccc ata tct gag ccc aaa gat tgc tat ttg cag agt gat ggt ttt tat Pro Ile Ser Glu Pro Lys Asp Cys Tyr Leu Gln Ser Asp Gly Phe Tyr	1488

## FRAV20030005 US NP Sequence Listing.txt

485	490	495	
gaa tgc att ttc cag cca atc ttc cta tta tct ggc tac aca atg tgg Glu Cys Ile Phe Gln Pro Ile Phe Leu Leu Ser Gly Tyr Thr Met Trp 500 505 510			1536
att agg atc aat cac tct cta ggt tca ctt gac tct cca cca aca tgt Ile Arg Ile Asn His Ser Leu Gly Ser Leu Asp Ser Pro Thr Cys 515 520 525			1584
gtc ctt cct gat tct gtg gtg aag cca ctg cct cca tcc agt gtg aaa Val Leu Pro Asp Ser Val Val Lys Pro Leu Pro Pro Ser Ser Val Lys 530 535 540			1632
gca gaa att act ata aac att gga tta ttg aaa ata tct tgg gaa aag Ala Glu Ile Thr Ile Asn Ile Gly Leu Leu Lys Ile Ser Trp Glu Lys 545 550 555 560			1680
cca gtc ttt cca gag aat aac ctt caa ttc cag att cgc tat ggt tta Pro Val Phe Pro Glu Asn Asn Leu Gln Phe Gln Ile Arg Tyr Gly Leu 565 570 575			1728
agt gga aaa gaa gta caa tgg aag atg tat gag gtt tat gat gca aaa Ser Gly Lys Glu Val Gln Trp Lys Met Tyr Glu Val Tyr Asp Ala Lys 580 585 590			1776
tca aaa tct gtc agt ctc cca gtt cca gac ttg tgt gca gtc tat gct Ser Lys Ser Val Ser Leu Pro Val Pro Asp Leu Cys Ala Val Tyr Ala 595 600 605			1824
gtt cag gtg cgc tgt aag agg cta gat gga ctg gga tat tgg agt aat Val Gln Val Arg Cys Lys Arg Leu Asp Gly Leu Gly Tyr Trp Ser Asn 610 615 620			1872
tgg agc aat cca gcc tac aca gtt gtc atg gat ata aaa gtt cct atg Trp Ser Asn Pro Ala Tyr Thr Val Val Met Asp Ile Lys Val Pro Met 625 630 635 640			1920
aga gga cct gaa ttt tgg aga ata att aat gga gat act atg aaa aag Arg Gly Pro Glu Phe Trp Arg Ile Ile Asn Gly Asp Thr Met Lys Lys 645 650 655			1968
gag aaa aat gtc act tta ctt tgg aag ccc ctg atg aaa aat gac tca Glu Lys Asn Val Thr Leu Leu Trp Lys Pro Leu Met Lys Asn Asp Ser 660 665 670			2016
ttg tgc agt gtt cag aga tat gtg ata aac cat cat act tcc tgc aat Leu Cys Ser Val Gln Arg Tyr Val Ile Asn His His Thr Ser Cys Asn 675 680 685			2064
gga aca tgg tca gaa gat gtg gga aat cac acg aaa ttc act ttc ctg Gly Thr Trp Ser Glu Asp Val Gly Asn His Thr Lys Phe Thr Phe Leu 690 695 700			2112
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ggt gct tct gtt gca aat ttt aat tta acc ttt tca tgg cct atg agc Gly Ala Ser Val Ala Asn Phe Asn Leu Thr Phe Ser Trp Pro Met Ser 725 730 735			2208
aaa gta aat atc gtg cag tca ctc agt gct tat cct tta aac agc agt			2256

FRAV20030005 US NP Sequence Listing.txt

Lys Val Asn Ile Val Gln Ser Leu Ser Ala Tyr Pro Leu Asn Ser Ser	
740 745 750	
tgt gtg att gtt tcc tgg ata cta tca ccc agt gat tac aag cta atg	2304
Cys Val Ile Val Ser Trp Ile Leu Ser Pro Ser Asp Tyr Lys Leu Met	
755 760 765	
tat ttt att att gag tgg aaa aat ctt aat gaa gat ggt gaa ata aaa	2352
Tyr Phe Ile Ile Glu Trp Lys Asn Leu Asn Glu Asp Gly Glu Ile Lys	
770 775 780	
tgg ctt aga atc tct tca tct gtt aag aag tat tat atc cat gat cat	2400
Trp Leu Arg Ile Ser Ser Val Lys Lys Tyr Tyr Ile His Asp His	
785 790 795 800	
ttt atc ccc att gag aag tac cag ttc agt ctt tac cca ata ttt atg	2448
Phe Ile Pro Ile Glu Lys Tyr Gln Phe Ser Leu Tyr Pro Ile Phe Met	
805 810 815	
gaa gga gtg gga aaa cca aag ata att aat agt ttc act caa gat gat	2496
Glu Gly Val Gly Lys Pro Lys Ile Ile Asn Ser Phe Thr Gln Asp Asp	
820 825 830	
att gaa aaa cac cag agt gat gca ggt tta tat gta att gtg cca gta	2544
Ile Glu Lys His Gln Ser Asp Ala Gly Leu Tyr Val Ile Val Pro Val	
835 840 845	
att att tcc tct tcc atc tta ttg ctt gga aca tta tta ata tca cac	2592
Ile Ile Ser Ser Ser Ile Leu Leu Leu Gly Thr Leu Leu Ile Ser His	
850 855 860	
caa aga atg aaa aag cta ttt tgg gaa gat gtt ccg aac ccc aag aat	2640
Gln Arg Met Lys Lys Leu Phe Trp Glu Asp Val Pro Asn Pro Lys Asn	
865 870 875 880	
tgt tcc tgg gca caa gga ctt aat ttt cag aag aga acg gac att ctt	2688
Cys Ser Trp Ala Gln Gly Leu Asn Phe Gln Lys Arg Thr Asp Ile Leu	
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tga	2691

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Tyr Val Ile Thr Ala Phe Asn Leu Ser Tyr Pro Ile Thr Pro Trp Arg
20 25 30

Phe Lys Leu Ser Cys Met Pro Pro Asn Ser Thr Tyr Asp Tyr Phe Leu
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## FRAV20030005 US NP Sequence Listing.txt

35

40

45

Leu Pro Ala Gly Leu Ser Lys Asn Thr Ser Asn Ser Asn Gly His Tyr  
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Glu Thr Ala Val Glu Pro Lys Phe Asn Ser Ser Gly Thr His Phe Ser  
 65 70 75 80

Asn Leu Ser Lys Thr Thr Phe His Cys Cys Phe Arg Ser Glu Gln Asp  
 85 90 95

Arg Asn Cys Ser Leu Cys Ala Asp Asn Ile Glu Gly Lys Thr Phe Val  
 100 105 110

Ser Thr Val Asn Ser Leu Val Phe Gln Gln Ile Asp Ala Asn Trp Asn  
 115 120 125

Ile Gln Cys Trp Leu Lys Gly Asp Leu Lys Leu Phe Ile Cys Tyr Val  
 130 135 140

Glu Ser Leu Phe Lys Asn Leu Phe Arg Asn Tyr Asn Tyr Lys Val His  
 145 150 155 160

Leu Leu Tyr Val Leu Pro Glu Val Leu Glu Asp Ser Pro Leu Val Pro  
 165 170 175

Gln Lys Gly Ser Phe Gln Met Val His Cys Asn Cys Ser Val His Glu  
 180 185 190

Cys Cys Glu Cys Leu Val Pro Val Pro Thr Ala Lys Leu Asn Asp Thr  
 195 200 205

Leu Leu Met Cys Leu Lys Ile Thr Ser Gly Gly Val Ile Phe Gln Ser  
 210 215 220

Pro Leu Met Ser Val Gln Pro Ile Asn Met Val Lys Pro Asp Pro Pro  
 225 230 235 240

Leu Gly Leu His Met Glu Ile Thr Asp Asp Gly Asn Leu Lys Ile Ser  
 245 250 255

Trp Ser Ser Pro Pro Leu Val Pro Phe Pro Leu Gln Tyr Gln Val Lys  
 260 265 270

Tyr Ser Glu Asn Ser Thr Thr Val Ile Arg Glu Ala Asp Lys Ile Val  
 275 280 285



FRAV20030005 US NP Sequence Listing.txt

Ser Ala Thr Ser Leu Leu Val Asp Ser Ile Leu Pro Gly Ser Ser Tyr  
290 295 300

Glu Val Gln Val Arg Gly Lys Arg Leu Asp Gly Pro Gly Ile Trp Ser  
305 310 315 320

Asp Trp Ser Thr Pro Arg Val Phe Thr Thr Gln Asp Val Ile Tyr Phe  
325 330 335

Pro Pro Lys Ile Leu Thr Ser Val Gly Ser Asn Val Ser Phe His Cys  
340 345 350

Ile Tyr Lys Lys Glu Asn Lys Ile Val Pro Ser Lys Glu Ile Val Trp  
355 360 365

Trp Met Asn Leu Ala Glu Lys Ile Pro Gln Ser Gln Tyr Asp Val Val  
370 375 380

Ser Asp His Val Ser Lys Val Thr Phe Phe Asn Leu Asn Glu Thr Lys  
385 390 395 400

Pro Arg Gly Lys Phe Thr Tyr Asp Ala Val Tyr Cys Cys Asn Glu His  
405 410 415

Glu Cys His His Arg Tyr Ala Glu Leu Tyr Val Ile Asp Val Asn Ile  
420 425 430

Asn Ile Ser Cys Glu Thr Asp Gly Tyr Leu Thr Lys Met Thr Cys Arg  
435 440 445

Trp Ser Thr Ser Thr Ile Gln Ser Leu Ala Glu Ser Thr Leu Gln Leu  
450 455 460

Arg Tyr His Arg Ser Ser Leu Tyr Cys Ser Asp Ile Pro Ser Ile His  
465 470 475 480

Pro Ile Ser Glu Pro Lys Asp Cys Tyr Leu Gln Ser Asp Gly Phe Tyr  
485 490 495

Glu Cys Ile Phe Gln Pro Ile Phe Leu Leu Ser Gly Tyr Thr Met Trp  
500 505 510

Ile Arg Ile Asn His Ser Leu Gly Ser Leu Asp Ser Pro Pro Thr Cys  
515 520 525

Val Leu Pro Asp Ser Val Val Lys Pro Leu Pro Pro Ser Ser Val Lys  
530 535 540

FRAV20030005 US NP Sequence Listing.txt

Ala Glu Ile Thr Ile Asn Ile Gly Leu Leu Lys Ile Ser Trp Glu Lys  
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Pro Val Phe Pro Glu Asn Asn Leu Gln Phe Gln Ile Arg Tyr Gly Leu  
565 570 575

Ser Gly Lys Glu Val Gln Trp Lys Met Tyr Glu Val Tyr Asp Ala Lys  
580 585 590

Ser Lys Ser Val Ser Leu Pro Val Pro Asp Leu Cys Ala Val Tyr Ala  
595 600 605

Val Gln Val Arg Cys Lys Arg Leu Asp Gly Leu Gly Tyr Trp Ser Asn  
610 615 620

Trp Ser Asn Pro Ala Tyr Thr Val Val Met Asp Ile Lys Val Pro Met  
625 630 635 640

Arg Gly Pro Glu Phe Trp Arg Ile Ile Asn Gly Asp Thr Met Lys Lys  
645 650 655

Glu Lys Asn Val Thr Leu Leu Trp Lys Pro Leu Met Lys Asn Asp Ser  
660 665 670

Leu Cys Ser Val Gln Arg Tyr Val Ile Asn His His Thr Ser Cys Asn  
675 680 685

Gly Thr Trp Ser Glu Asp Val Gly Asn His Thr Lys Phe Thr Phe Leu  
690 695 700

Trp Thr Glu Gln Ala His Thr Val Thr Val Leu Ala Ile Asn Ser Ile  
705 710 715 720

Gly Ala Ser Val Ala Asn Phe Asn Leu Thr Phe Ser Trp Pro Met Ser  
725 730 735

Lys Val Asn Ile Val Gln Ser Leu Ser Ala Tyr Pro Leu Asn Ser Ser  
740 745 750

Cys Val Ile Val Ser Trp Ile Leu Ser Pro Ser Asp Tyr Lys Leu Met  
755 760 765

Tyr Phe Ile Ile Glu Trp Lys Asn Leu Asn Glu Asp Gly Glu Ile Lys  
770 775 780

Trp Leu Arg Ile Ser Ser Ser Val Lys Lys Tyr Tyr Ile His Asp His  
785 790 795 800

FRAV20030005 US NP Sequence Listing.txt

Phe Ile Pro Ile Glu Lys Tyr Gln Phe Ser Leu Tyr Pro Ile Phe Met  
805 810 815

Glu Gly Val Gly Lys Pro Lys Ile Ile Asn Ser Phe Thr Gln Asp Asp  
820 825 830

Ile Glu Lys His Gln Ser Asp Ala Gly Leu Tyr Val Ile Val Pro Val  
835 840 845

Ile Ile Ser Ser Ser Ile Leu Leu Leu Gly Thr Leu Leu Ile Ser His  
850 855 860

Gln Arg Met Lys Lys Leu Phe Trp Glu Asp Val Pro Asn Pro Lys Asn  
865 870 875 880

Cys Ser Trp Ala Gln Gly Leu Asn Phe Gln Lys Arg Thr Asp Ile Leu  
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48

FRAV20030005 US NP Sequence Listing.txt

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Leu	Leu	Met	Leu	Phe	His	Leu	Gly	Leu	Gln	Ala	Ser	Ile	Ser	Ala	Arg	
			20					25					30			
cag	gag	cag	aag	ctt	atc	tcg	gag	gag	gac	ctg	acg	cgt	tat	cca	att	144
Gln	Glu	Gln	Lys	Leu	Ile	Ser	Glu	Glu	Asp	Leu	Thr	Arg	Tyr	Pro	Ile	
		35					40					45				
act	cct	tgg	aga	ttt	aag	ttg	tct	tgc	atg	cca	cca	aat	tca	acc	tat	192
Thr	Pro	Trp	Arg	Phe	Lys	Leu	Ser	Cys	Met	Pro	Pro	Asn	Ser	Thr	Tyr	
	50					55					60					
gac	tac	ttc	ctt	ttg	cct	gct	gga	ctc	tca	aag	aat	act	tca	aat	tcg	240
Asp	Tyr	Phe	Leu	Leu	Pro	Ala	Gly	Leu	Ser	Lys	Asn	Thr	Ser	Asn	Ser	
65					70					75					80	
aat	gga	cat	tat	gag	aca	gct	gtt	gaa	cct	aag	ttt	aat	tca	agt	ggt	288
Asn	Gly	His	Tyr	Glu	Thr	Ala	Val	Glu	Pro	Lys	Phe	Asn	Ser	Ser	Gly	
				85					90					95		
act	cac	ttt	tct	aac	tta	tcc	aaa	aca	act	ttc	cac	tgt	tgc	ttt	cgg	336
Thr	His	Phe	Ser	Asn	Leu	Ser	Lys	Thr	Thr	Phe	His	Cys	Cys	Phe	Arg	
			100					105					110			
agt	gag	caa	gat	aga	aac	tgc	tcc	tta	tgt	gca	gac	aac	att	gaa	gga	384
Ser	Glu	Gln	Asp	Arg	Asn	Cys	Ser	Leu	Cys	Ala	Asp	Asn	Ile	Glu	Gly	
		115					120					125				
acg	aca	ttt	gtt	tca	aca	gta	aat	tct	tta	gtt	ttt	caa	caa	ata	gat	432
Thr	Thr	Phe	Val	Ser	Thr	Val	Asn	Ser	Leu	Val	Phe	Gln	Gln	Ile	Asp	
	130					135					140					
gca	aac	tgg	aac	ata	cag	tgc	tgg	cta	aaa	gga	gac	tta	aaa	tta	ttc	480
Ala	Asn	Trp	Asn	Ile	Gln	Cys	Trp	Leu	Lys	Gly	Asp	Leu	Lys	Leu	Phe	
145					150					155					160	
atc	tgt	tat	gtg	gag	tca	tta	ttt	aag	aat	cta	ttc	agg	aat	tat	aac	528
Ile	Cys	Tyr	Val	Glu	Ser	Leu	Phe	Lys	Asn	Leu	Phe	Arg	Asn	Tyr	Asn	
				165					170					175		
tat	aag	gtc	cat	ctt	tta	tat	gtt	ctg	cct	gaa	gtg	tta	gaa	gat	tca	576
Tyr	Lys	Val	His	Leu	Leu	Tyr	Val	Leu	Pro	Glu	Val	Leu	Glu	Asp	Ser	
			180					185					190			
cct	ctg	gtt	ccc	caa	aaa	ggc	agt	ttt	cag	atg	gtt	cac	tgc	aat	tgc	624
Pro	Leu	Val	Pro	Gln	Lys	Gly	Ser	Phe	Gln	Met	Val	His	Cys	Asn	Cys	
		195					200					205				
agt	gtt	cat	gaa	tgt	tgt	gaa	tgt	ctt	gtg	cct	gtg	cca	aca	gcc	aaa	672
Ser	Val	His	Glu	Cys	Cys	Glu	Cys	Leu	Val	Pro	Val	Pro	Thr	Ala	Lys	
	210					215					220					
ctc	aac	gac	act	ctc	ctt	atg	tgt	ttg	aaa	atc	aca	tct	ggt	gga	gta	720
Leu	Asn	Asp	Thr	Leu	Leu	Met	Cys	Leu	Lys	Ile	Thr	Ser	Gly	Gly	Val	
225					230					235					240	
att	ttc	cgg	tca	cct	cta	atg	tca	gtt	cag	ccc	ata	aat	atg	gtg	aag	768
Ile	Phe	Arg	Ser	Pro	Leu	Met	Ser	Val	Gln	Pro	Ile	Asn	Met	Val	Lys	
				245					250					255		
cct	gat	cca	cca	tta	ggt	ttg	cat	atg	gaa	atc	aca	gat	gat	ggt	aat	816
Pro	Asp	Pro	Pro	Leu	Gly	Leu	His	Met	Glu	Ile	Thr	Asp	Asp	Gly	Asn	
			260					265					270			

FRAV20030005 US NP Sequence Listing.txt

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gac aag att gtc tca gct aca tcc ctg cta gta gac agt ata ctt cct Asp Lys Ile Val Ser Ala Thr Ser Leu Leu Val Asp Ser Ile Leu Pro 305 310 315	960
ggg tct tcg tat gag gtt cag gtg agg ggc aag aga ctg gat ggc cca Gly Ser Ser Tyr Glu Val Gln Val Arg Gly Lys Arg Leu Asp Gly Pro 325 330 335	1008
gga atc tgg agt gac tgg agt act cct cgt gtc ttt acc aca caa gat Gly Ile Trp Ser Asp Trp Ser Thr Pro Arg Val Phe Thr Thr Gln Asp 340 345 350	1056
gtc ata tac ttt cca cct aaa att ctg aca agt gtt ggg tct aat gtt Val Ile Tyr Phe Pro Pro Lys Ile Leu Thr Ser Val Gly Ser Asn Val 355 360 365	1104
tct ttt cac tgc atc tat aag aag gaa aac aag att gtt ccc tca aaa Ser Phe His Cys Ile Tyr Lys Lys Glu Asn Lys Ile Val Pro Ser Lys 370 375 380	1152
gag att gtt tgg tgg atg aat tta gct gag aaa att cct caa agc cag Glu Ile Val Trp Trp Met Asn Leu Ala Glu Lys Ile Pro Gln Ser Gln 385 390 395	1200
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aat gaa acc aaa cct cga gga aag ttt acc tat gat gca gtg tac tgc Asn Glu Thr Lys Pro Arg Gly Lys Phe Thr Tyr Asp Ala Val Tyr Cys 420 425 430	1296
tgc aat gaa cat gaa tgc cat cat cgc tat gct gaa tta tat gtg att Cys Asn Glu His Glu Cys His His Arg Tyr Ala Glu Leu Tyr Val Ile 435 440 445	1344
gat gtc aat atc aat atc tca tgt gaa act gat ggg tac tta act aaa Asp Val Asn Ile Asn Ile Ser Cys Glu Thr Asp Gly Tyr Leu Thr Lys 450 455 460	1392
atg act tgc aga tgg tca acc agt aca atc cag tca ctt gcg gaa agc Met Thr Cys Arg Trp Ser Thr Ser Thr Ile Gln Ser Leu Ala Glu Ser 465 470 475	1440
act ttg caa ttg agg tat cat agg agc agc ctt tac tgt tct gat att Thr Leu Gln Leu Arg Tyr His Arg Ser Ser Leu Tyr Cys Ser Asp Ile 485 490 495	1488
cca tct att cat ccc ata tct gag ccc aaa gat tgc tat ttg cag agt Pro Ser Ile His Pro Ile Ser Glu Pro Lys Asp Cys Tyr Leu Gln Ser 500 505 510	1536
gat ggt ttt tat gaa tgc att ttc cag cca atc ttc cta tta tct ggc Asp Gly Phe Tyr Glu Cys Ile Phe Gln Pro Ile Phe Leu Leu Ser Gly 510 515 520	1584

## FRAV20030005 US NP Sequence Listing.txt

515	520	525	
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cgc tat ggt tta agt gga aaa gaa gta caa tgg aag atg tat gag gtt Arg Tyr Gly Leu Ser Gly Lys Glu Val Gln Trp Lys Met Tyr Glu Val 595 600 605			1824
tat gat gca aaa tca aaa tct gtc agt ctc cca gtt cca gac ttg tgt Tyr Asp Ala Lys Ser Lys Ser Val Ser Leu Pro Val Pro Asp Leu Cys 610 615 620			1872
gca gtc tat gct gtt cag gtg cgc tgt aag agg cta gat gga ctg gga Ala Val Tyr Ala Val Gln Val Arg Cys Lys Arg Leu Asp Gly Leu Gly 625 630 635 640			1920
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aaa gtt cct atg aga gga cct gaa ttt tgg aga ata att aat gga gat Lys Val Pro Met Arg Gly Pro Glu Phe Trp Arg Ile Ile Asn Gly Asp 660 665 670			2016
act atg aaa aag gag aaa aat gtc act tta ctt tgg aag ccc ctg atg Thr Met Lys Lys Glu Lys Asn Val Thr Leu Leu Trp Lys Pro Leu Met 675 680 685			2064
aaa aat gac tca ttg tgc agt gtt cag aga tat gtg ata aac cat cat Lys Asn Asp Ser Leu Cys Ser Val Gln Arg Tyr Val Ile Asn His His 690 695 700			2112
act tcc tgc aat gga aca tgg tca gaa gat gtg gga aat cac acg aaa Thr Ser Cys Asn Gly Thr Trp Ser Glu Asp Val Gly Asn His Thr Lys 705 710 715 720			2160
ttc act ttc ctg tgg aca gag caa gca cat act gtt acg gtt ctg gcc Phe Thr Phe Leu Trp Thr Glu Gln Ala His Thr Val Thr Val Leu Ala 725 730 735			2208
atc aat tca att ggt gct tct gtt gca aat ttt aat tta acc ttt tca Ile Asn Ser Ile Gly Ala Ser Val Ala Asn Phe Asn Leu Thr Phe Ser 740 745 750			2256
tgg cct atg agc aaa gta aat atc gtg cag tca ctc agt gct tat cct Trp Pro Met Ser Lys Val Asn Ile Val Gln Ser Leu Ser Ala Tyr Pro 755 760 765			2304
tta aac agc agt tgt gtg att gtt tcc tgg ata cta tca ccc agt gat			2352

## FRAV20030005 US NP Sequence Listing.txt

Leu	Asn	Ser	Ser	Cys	Val	Ile	Val	Ser	Trp	Ile	Leu	Ser	Pro	Ser	Asp		
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Tyr	Lys	Leu	Met	Tyr	Phe	Ile	Ile	Glu	Trp	Lys	Asn	Leu	Asn	Glu	Asp		
785					790			795						800			
ggt	gaa	ata	aaa	tgg	ctt	aga	atc	tct	tca	tct	ggt	aag	aag	tat	tat	2448	
Gly	Glu	Ile	Lys	Trp	Leu	Arg	Ile	Ser	Ser	Ser	Val	Lys	Lys	Tyr	Tyr		
				805				810						815			
atc	cat	gat	cat	ttt	atc	ccc	att	gag	aag	tac	cag	ttc	agt	ctt	tac	2496	
Ile	His	Asp	His	Phe	Ile	Pro	Ile	Glu	Lys	Tyr	Gln	Phe	Ser	Leu	Tyr		
			820					825					830				
cca	ata	ttt	atg	gaa	gga	gtg	gga	aaa	cca	aag	ata	att	aat	agt	ttc	2544	
Pro	Ile	Phe	Met	Glu	Gly	Val	Gly	Lys	Pro	Lys	Ile	Ile	Asn	Ser	Phe		
		835					840					845					
act	caa	gat	gat	att	gaa	aaa	cac	cag	agt	gat	gca	ggt	tta	tat	gta	2592	
Thr	Gln	Asp	Asp	Ile	Glu	Lys	His	Gln	Ser	Asp	Ala	Gly	Leu	Tyr	Val		
	850					855					860						
att	gtg	cca	gta	att	att	tcc	tct	tcc	atc	tta	ttg	ctt	gga	aca	tta	2640	
Ile	Val	Pro	Val	Ile	Ile	Ser	Ser	Ser	Ile	Leu	Leu	Leu	Gly	Thr	Leu		
865					870				875						880		
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Leu	Ile	Ser	His	Gln	Arg	Met	Lys	Lys	Leu	Phe	Trp	Glu	Asp	Val	Pro		
				885					890					895			
aac	ccc	aag	aat	tgt	tcc	tgg	gca	caa	gga	ctt	aat	ttt	cag	aag	aga	2736	
Asn	Pro	Lys	Asn	Cys	Ser	Trp	Ala	Gln	Gly	Leu	Asn	Phe	Gln	Lys	Arg		
			900					905					910				
acg	gac	att	ctg	gat	cca	ccg	gct	aga	gcc	acc	atg	acc	agc	aag	gtg	2784	
Thr	Asp	Ile	Leu	Asp	Pro	Pro	Ala	Arg	Ala	Thr	Met	Thr	Ser	Lys	Val		
		915					920					925					
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gcc	agg	tgc	aag	cag	atg	aac	gtg	ctg	gac	agc	ttc	atc	aac	tac	tac	2880	
Ala	Arg	Cys	Lys	Gln	Met	Asn	Val	Leu	Asp	Ser	Phe	Ile	Asn	Tyr	Tyr		
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gac	agc	gag	aag	cac	gcc	gag	aac	gcc	gtg	atc	ttc	ctg	cac	ggc	aac	2928	
Asp	Ser	Glu	Lys	His	Ala	Glu	Asn	Ala	Val	Ile	Phe	Leu	His	Gly	Asn		
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Ala	Ala	Ser	Ser	Tyr	Leu	Trp	Arg	His	Val	Val	Pro	His	Ile	Glu	Pro		
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gtg	gcc	agg	tgc	atc	atc	ccc	gat	ctg	atc	ggc	atg	ggc	aag	agc	ggc	3024	
Val	Ala	Arg	Cys	Ile	Ile	Pro	Asp	Leu	Ile	Gly	Met	Gly	Lys	Ser	Gly		
		995					1000					1005					
aag	agc	ggc	aac	ggc	agc	tac	agg	ctg	ctg	gac	cac	tac	aag	tac		3069	
Lys	Ser	Gly	Asn	Gly	Ser	Tyr	Arg	Leu	Leu	Asp	His	Tyr	Lys	Tyr			
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FRAV20030005 US NP Sequence Listing.txt															
ctg Leu	acc Thr	gcc Ala	tgg Trp	ttc Phe	gag Glu	ctc Leu	ctg Leu	aac Asn	ctg Leu	ccc Pro	aag Lys	aag Lys	atc Ile	atc Ile	3114
	1025					1030					1035				
ttc Phe	gtg Val	ggc Gly	cac His	gac Asp	tgg Trp	ggc Gly	gcc Ala	tgc Cys	ctg Leu	gcc Ala	ttc Phe	cac His	tac Tyr	agc Ser	3159
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tac Tyr	gag Glu	cac His	cag Gln	gac Asp	aag Lys	atc Ile	aag Lys	gcc Ala	atc Ile	gtg Val	cac His	gcc Ala	gag Glu	agc Ser	3204
	1055					1060					1065				
gtg Val	gtg Val	gac Asp	gtg Val	atc Ile	gag Glu	agc Ser	tgg Trp	gac Asp	gag Glu	tgg Trp	cca Pro	gac Asp	atc Ile	gag Glu	3249
	1070					1075					1080				
gag Glu	gac Asp	atc Ile	gcc Ala	ctg Leu	atc Ile	aag Lys	agc Ser	gag Glu	gag Glu	ggc Gly	gag Glu	aag Lys	atg Met	gtg Val	3294
	1085					1090					1095				
ctg Leu	gag Glu	aac Asn	aac Asn	ttc Phe	ttc Phe	gtg Val	gag Glu	acc Thr	atg Met	ctg Leu	ccc Pro	agc Ser	aag Lys	atc Ile	3339
	1100					1105					1110				
atg Met	aga Arg	aag Lys	ctg Leu	gag Glu	ccc Pro	gag Glu	gag Glu	ttc Phe	gcc Ala	gcc Ala	tac Tyr	ctg Leu	gag Glu	ccc Pro	3384
	1115					1120					1125				
ttc Phe	aag Lys	gag Glu	aag Lys	ggc Gly	gag Glu	gtg Val	aga Arg	aga Arg	ccc Pro	acc Thr	ctg Leu	agc Ser	tgg Trp	ccc Pro	3429
	1130					1135					1140				
aga Arg	gag Glu	atc Ile	ccc Pro	ctg Leu	gtg Val	aag Lys	ggc Gly	ggc Gly	aag Lys	ccc Pro	gac Asp	gtg Val	gtg Val	cag Gln	3474
	1145					1150					1155				
atc Ile	gtg Val	aga Arg	aac Asn	tac Tyr	aac Asn	gcc Ala	tac Tyr	ctg Leu	aga Arg	gcc Ala	agc Ser	gac Asp	gac Asp	ctg Leu	3519
	1160					1165					1170				
ccc Pro	aag Lys	atg Met	ttc Phe	atc Ile	gag Glu	agc Ser	gac Asp	ccc Pro	ggc Gly	ttc Phe	ttc Phe	agc Ser	aac Asn	gcc Ala	3564
	1175					1180					1185				
atc Ile	gtg Val	gag Glu	ggc Gly	gcc Ala	aag Lys	aag Lys	ttc Phe	ccc Pro	aac Asn	acc Thr	gag Glu	ttc Phe	gtg Val	aag Lys	3609
	1190					1195					1200				
gtg Val	aag Lys	ggc Gly	ctg Leu	cac His	ttc Phe	agc Ser	cag Gln	gag Glu	gac Asp	gcc Ala	ccc Pro	gac Asp	gag Glu	atg Met	3654
	1205					1210					1215				
ggc Gly	aag Lys	tac Tyr	atc Ile	aag Lys	agc Ser	ttc Phe	gtg Val	gag Glu	aga Arg	gtg Val	ctg Leu	aag Lys	aac Asn	gag Glu	3699
	1220					1225					1230				
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FRAV20030005 US NP Sequence Listing.txt

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Leu Leu Met Leu Phe His Leu Gly Leu Gln Ala Ser Ile Ser Ala Arg  
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Gln Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Thr Arg Tyr Pro Ile  
35 40 45

Thr Pro Trp Arg Phe Lys Leu Ser Cys Met Pro Pro Asn Ser Thr Tyr  
50 55 60

Asp Tyr Phe Leu Leu Pro Ala Gly Leu Ser Lys Asn Thr Ser Asn Ser  
65 70 75 80

Asn Gly His Tyr Glu Thr Ala Val Glu Pro Lys Phe Asn Ser Ser Gly  
85 90 95

Thr His Phe Ser Asn Leu Ser Lys Thr Thr Phe His Cys Cys Phe Arg  
100 105 110

Ser Glu Gln Asp Arg Asn Cys Ser Leu Cys Ala Asp Asn Ile Glu Gly  
115 120 125

Thr Thr Phe Val Ser Thr Val Asn Ser Leu Val Phe Gln Gln Ile Asp  
130 135 140

Ala Asn Trp Asn Ile Gln Cys Trp Leu Lys Gly Asp Leu Lys Leu Phe  
145 150 155 160

Ile Cys Tyr Val Glu Ser Leu Phe Lys Asn Leu Phe Arg Asn Tyr Asn  
165 170 175

FRAV20030005 US NP Sequence Listing.txt

Tyr Lys Val His Leu Leu Tyr Val Leu Pro Glu Val Leu Glu Asp Ser  
 180 185 190  
 Pro Leu Val Pro Gln Lys Gly Ser Phe Gln Met Val His Cys Asn Cys  
 195 200 205  
 Ser Val His Glu Cys Cys Glu Cys Leu Val Pro Val Pro Thr Ala Lys  
 210 215 220  
 Leu Asn Asp Thr Leu Leu Met Cys Leu Lys Ile Thr Ser Gly Gly Val  
 225 230 235 240  
 Ile Phe Arg Ser Pro Leu Met Ser Val Gln Pro Ile Asn Met Val Lys  
 245 250 255  
 Pro Asp Pro Pro Leu Gly Leu His Met Glu Ile Thr Asp Asp Gly Asn  
 260 265 270  
 Leu Lys Ile Ser Trp Ser Ser Pro Pro Leu Val Pro Phe Pro Leu Gln  
 275 280 285  
 Tyr Gln Val Lys Tyr Ser Glu Asn Ser Thr Thr Val Ile Arg Glu Ala  
 290 295 300  
 Asp Lys Ile Val Ser Ala Thr Ser Leu Leu Val Asp Ser Ile Leu Pro  
 305 310 315 320  
 Gly Ser Ser Tyr Glu Val Gln Val Arg Gly Lys Arg Leu Asp Gly Pro  
 325 330 335  
 Gly Ile Trp Ser Asp Trp Ser Thr Pro Arg Val Phe Thr Thr Gln Asp  
 340 345 350  
 Val Ile Tyr Phe Pro Pro Lys Ile Leu Thr Ser Val Gly Ser Asn Val  
 355 360 365  
 Ser Phe His Cys Ile Tyr Lys Lys Glu Asn Lys Ile Val Pro Ser Lys  
 370 375 380  
 Glu Ile Val Trp Trp Met Asn Leu Ala Glu Lys Ile Pro Gln Ser Gln  
 385 390 395 400  
 Tyr Asp Val Val Ser Asp His Val Ser Lys Val Thr Phe Phe Asn Leu  
 405 410 415  
 Asn Glu Thr Lys Pro Arg Gly Lys Phe Thr Tyr Asp Ala Val Tyr Cys  
 420 425 430

FRAV20030005 US NP Sequence Listing.txt

Cys Asn Glu His Glu Cys His His Arg Tyr Ala Glu Leu Tyr Val Ile  
 435 440 445  
 Asp Val Asn Ile Asn Ile Ser Cys Glu Thr Asp Gly Tyr Leu Thr Lys  
 450 455 460  
 Met Thr Cys Arg Trp Ser Thr Ser Thr Ile Gln Ser Leu Ala Glu Ser  
 465 470 475 480  
 Thr Leu Gln Leu Arg Tyr His Arg Ser Ser Leu Tyr Cys Ser Asp Ile  
 485 490 495  
 Pro Ser Ile His Pro Ile Ser Glu Pro Lys Asp Cys Tyr Leu Gln Ser  
 500 505 510  
 Asp Gly Phe Tyr Glu Cys Ile Phe Gln Pro Ile Phe Leu Leu Ser Gly  
 515 520 525  
 Tyr Thr Met Trp Ile Arg Ile Asn His Ser Leu Gly Ser Leu Asp Ser  
 530 535 540  
 Pro Pro Thr Cys Val Leu Pro Asp Ser Val Val Lys Pro Leu Pro Pro  
 545 550 555 560  
 Ser Ser Val Lys Ala Glu Ile Thr Ile Asn Ile Gly Leu Leu Lys Ile  
 565 570 575  
 Ser Trp Glu Lys Pro Val Phe Pro Glu Asn Asn Leu Gln Phe Gln Ile  
 580 585 590  
 Arg Tyr Gly Leu Ser Gly Lys Glu Val Gln Trp Lys Met Tyr Glu Val  
 595 600 605  
 Tyr Asp Ala Lys Ser Lys Ser Val Ser Leu Pro Val Pro Asp Leu Cys  
 610 615 620  
 Ala Val Tyr Ala Val Gln Val Arg Cys Lys Arg Leu Asp Gly Leu Gly  
 625 630 635 640  
 Tyr Trp Ser Asn Trp Ser Asn Pro Ala Tyr Thr Val Val Met Asp Ile  
 645 650 655  
 Lys Val Pro Met Arg Gly Pro Glu Phe Trp Arg Ile Ile Asn Gly Asp  
 660 665 670  
 Thr Met Lys Lys Glu Lys Asn Val Thr Leu Leu Trp Lys Pro Leu Met

## FRAV20030005 US NP Sequence Listing.txt

675

680

685

Lys Asn Asp Ser Leu Cys Ser Val Gln Arg Tyr Val Ile Asn His His  
690 695 700

Thr Ser Cys Asn Gly Thr Trp Ser Glu Asp Val Gly Asn His Thr Lys  
705 710 715 720

Phe Thr Phe Leu Trp Thr Glu Gln Ala His Thr Val Thr Val Leu Ala  
725 730 735

Ile Asn Ser Ile Gly Ala Ser Val Ala Asn Phe Asn Leu Thr Phe Ser  
740 745 750

Trp Pro Met Ser Lys Val Asn Ile Val Gln Ser Leu Ser Ala Tyr Pro  
755 760 765

Leu Asn Ser Ser Cys Val Ile Val Ser Trp Ile Leu Ser Pro Ser Asp  
770 775 780

Tyr Lys Leu Met Tyr Phe Ile Ile Glu Trp Lys Asn Leu Asn Glu Asp  
785 790 795 800

Gly Glu Ile Lys Trp Leu Arg Ile Ser Ser Ser Val Lys Lys Tyr Tyr  
805 810 815

Ile His Asp His Phe Ile Pro Ile Glu Lys Tyr Gln Phe Ser Leu Tyr  
820 825 830

Pro Ile Phe Met Glu Gly Val Gly Lys Pro Lys Ile Ile Asn Ser Phe  
835 840 845

Thr Gln Asp Asp Ile Glu Lys His Gln Ser Asp Ala Gly Leu Tyr Val  
850 855 860

Ile Val Pro Val Ile Ile Ser Ser Ser Ile Leu Leu Leu Gly Thr Leu  
865 870 875 880

Leu Ile Ser His Gln Arg Met Lys Lys Leu Phe Trp Glu Asp Val Pro  
885 890 895

Asn Pro Lys Asn Cys Ser Trp Ala Gln Gly Leu Asn Phe Gln Lys Arg  
900 905 910

Thr Asp Ile Leu Asp Pro Pro Ala Arg Ala Thr Met Thr Ser Lys Val  
915 920 925

FRAV20030005 US NP Sequence Listing.txt

Tyr Asp Pro Glu Gln Arg Lys Arg Met Ile Thr Gly Pro Gln Trp Trp  
 930 935 940  
 Ala Arg Cys Lys Gln Met Asn Val Leu Asp Ser Phe Ile Asn Tyr Tyr  
 945 950 955 960  
 Asp Ser Glu Lys His Ala Glu Asn Ala Val Ile Phe Leu His Gly Asn  
 965 970 975  
 Ala Ala Ser Ser Tyr Leu Trp Arg His Val Val Pro His Ile Glu Pro  
 980 985 990  
 Val Ala Arg Cys Ile Ile Pro Asp Leu Ile Gly Met Gly Lys Ser Gly  
 995 1000 1005  
 Lys Ser Gly Asn Gly Ser Tyr Arg Leu Leu Asp His Tyr Lys Tyr  
 1010 1015 1020  
 Leu Thr Ala Trp Phe Glu Leu Leu Asn Leu Pro Lys Lys Ile Ile  
 1025 1030 1035  
 Phe Val Gly His Asp Trp Gly Ala Cys Leu Ala Phe His Tyr Ser  
 1040 1045 1050  
 Tyr Glu His Gln Asp Lys Ile Lys Ala Ile Val His Ala Glu Ser  
 1055 1060 1065  
 Val Val Asp Val Ile Glu Ser Trp Asp Glu Trp Pro Asp Ile Glu  
 1070 1075 1080  
 Glu Asp Ile Ala Leu Ile Lys Ser Glu Glu Gly Glu Lys Met Val  
 1085 1090 1095  
 Leu Glu Asn Asn Phe Phe Val Glu Thr Met Leu Pro Ser Lys Ile  
 1100 1105 1110  
 Met Arg Lys Leu Glu Pro Glu Glu Phe Ala Ala Tyr Leu Glu Pro  
 1115 1120 1125  
 Phe Lys Glu Lys Gly Glu Val Arg Arg Pro Thr Leu Ser Trp Pro  
 1130 1135 1140  
 Arg Glu Ile Pro Leu Val Lys Gly Gly Lys Pro Asp Val Val Gln  
 1145 1150 1155  
 Ile Val Arg Asn Tyr Asn Ala Tyr Leu Arg Ala Ser Asp Asp Leu  
 1160 1165 1170

FRAV20030005 US NP Sequence Listing.txt

Pro Lys Met Phe Ile Glu Ser Asp Pro Gly Phe Phe Ser Asn Ala  
1175 1180 1185

Ile Val Glu Gly Ala Lys Lys Phe Pro Asn Thr Glu Phe Val Lys  
1190 1195 1200

Val Lys Gly Leu His Phe Ser Gln Glu Asp Ala Pro Asp Glu Met  
1205 1210 1215

Gly Lys Tyr Ile Lys Ser Phe Val Glu Arg Val Leu Lys Asn Glu  
1220 1225 1230

Gln

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ctc ctg atg ctc ttc cac ctg gga ctc caa gct tca atc tcg gcg cgc	96
Leu Leu Met Leu Phe His Leu Gly Leu Gln Ala Ser Ile Ser Ala Arg	
20 25 30	

cag gag cag aag ctt atc tcg gag gag gac ctg acg cgt tat cca att	144
Page 31	

FRAV20030005 US NP Sequence Listing.txt

Gln	Glu	Gln	Lys	Leu	Ile	Ser	Glu	Glu	Asp	Leu	Thr	Arg	Tyr	Pro	Ile		
		35					40					45					
act	cct	tgg	aga	ttt	aag	ttg	tct	tgc	atg	cca	cca	aat	tca	acc	tat		192
Thr	Pro	Trp	Arg	Phe	Lys	Leu	Ser	Cys	Met	Pro	Pro	Asn	Ser	Thr	Tyr		
	50					55				60							
gac	tac	ttc	ctt	ttg	cct	gct	gga	ctc	tca	aag	aat	act	tca	aat	tcg		240
Asp	Tyr	Phe	Leu	Leu	Pro	Ala	Gly	Leu	Ser	Lys	Asn	Thr	Ser	Asn	Ser		
65					70					75					80		
aat	gga	cat	tat	gag	aca	gct	gtt	gaa	cct	aag	ttt	aat	tca	agt	ggt		288
Asn	Gly	His	Tyr	Glu	Thr	Ala	Val	Glu	Pro	Lys	Phe	Asn	Ser	Ser	Gly		
				85					90					95			
act	cac	ttt	tct	aac	tta	tcc	aaa	aca	act	ttc	cac	tgt	tgc	ttt	cgg		336
Thr	His	Phe	Ser	Asn	Leu	Ser	Lys	Thr	Thr	Phe	His	Cys	Cys	Phe	Arg		
			100					105					110				
agt	gag	caa	gat	aga	aac	tgc	tcc	tta	tgt	gca	gac	aac	att	gaa	gga		384
Ser	Glu	Gln	Asp	Arg	Asn	Cys	Ser	Leu	Cys	Ala	Asp	Asn	Ile	Glu	Gly		
		115					120					125					
acg	aca	ttt	gtt	tca	aca	gta	aat	tct	tta	gtt	ttt	caa	caa	ata	gat		432
Thr	Thr	Phe	Val	Ser	Thr	Val	Asn	Ser	Leu	Val	Phe	Gln	Gln	Ile	Asp		
	130					135					140						
gca	aac	tgg	aac	ata	cag	tgc	tgg	cta	aaa	gga	gac	tta	aaa	tta	ttc		480
Ala	Asn	Trp	Asn	Ile	Gln	Cys	Trp	Leu	Lys	Gly	Asp	Leu	Lys	Leu	Phe		
145					150					155					160		
atc	tgt	tat	gtg	gag	tca	tta	ttt	aag	aat	cta	ttc	agg	aat	tat	aac		528
Ile	Cys	Tyr	Val	Glu	Ser	Leu	Phe	Lys	Asn	Leu	Phe	Arg	Asn	Tyr	Asn		
				165					170					175			
tat	aag	gtc	cat	ctt	tta	tat	gtt	ctg	cct	gaa	gtg	tta	gaa	gat	tca		576
Tyr	Lys	Val	His	Leu	Leu	Tyr	Val	Leu	Pro	Glu	Val	Leu	Glu	Asp	Ser		
			180					185					190				
cct	ctg	gtt	ccc	caa	aaa	ggc	agt	ttt	cag	atg	gtt	cac	tgc	aat	tgc		624
Pro	Leu	Val	Pro	Gln	Lys	Gly	Ser	Phe	Gln	Met	Val	His	Cys	Asn	Cys		
		195					200					205					
agt	gtt	cat	gaa	tgt	tgt	gaa	tgt	ctt	gtg	cct	gtg	cca	aca	gcc	aaa		672
Ser	Val	His	Glu	Cys	Cys	Glu	Cys	Leu	Val	Pro	Val	Pro	Thr	Ala	Lys		
	210					215					220						
ctc	aac	gac	act	ctc	ctt	atg	tgt	ttg	aaa	atc	aca	tct	ggg	gga	gta		720
Leu	Asn	Asp	Thr	Leu	Leu	Met	Cys	Leu	Lys	Ile	Thr	Ser	Gly	Gly	Val		
225					230					235					240		
att	ttc	cgg	tca	cct	cta	atg	tca	gtt	cag	ccc	ata	aat	atg	gtg	aag		768
Ile	Phe	Arg	Ser	Pro	Leu	Met	Ser	Val	Gln	Pro	Ile	Asn	Met	Val	Lys		
				245					250					255			
cct	gat	cca	cca	tta	ggg	ttg	cat	atg	gaa	atc	aca	gat	gat	ggg	aat		816
Pro	Asp	Pro	Pro	Leu	Gly	Leu	His	Met	Glu	Ile	Thr	Asp	Asp	Gly	Asn		
			260					265					270				
tta	aag	att	tct	tgg	tcc	agc	cca	cca	ttg	gta	cca	ttt	cca	ctt	caa		864
Leu	Lys	Ile	Ser	Trp	Ser	Ser	Pro	Pro	Leu	Val	Pro	Phe	Pro	Leu	Gln		
		275					280					285					

FRAV20030005 US NP Sequence Listing.txt

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ggg tct tcg tat gag gtt cag gtg agg ggc aag aga ctg gat ggc cca Gly Ser Ser Tyr Glu Val Gln Val Arg Gly Lys Arg Leu Asp Gly Pro 325 330 335	1008
gga atc tgg agt gac tgg agt act cct cgt gtc ttt acc aca caa gat Gly Ile Trp Ser Asp Trp Ser Thr Pro Arg Val Phe Thr Thr Gln Asp 340 345 350	1056
gtc ata tac ttt cca cct aaa att ctg aca agt gtt ggg tct aat gtt Val Ile Tyr Phe Pro Pro Lys Ile Leu Thr Ser Val Gly Ser Asn Val 355 360 365	1104
tct ttt cac tgc atc tat aag aag gaa aac aag att gtt ccc tca aaa Ser Phe His Cys Ile Tyr Lys Lys Glu Asn Lys Ile Val Pro Ser Lys 370 375 380	1152
gag att gtt tgg tgg atg aat tta gct gag aaa att cct caa agc cag Glu Ile Val Trp Trp Met Asn Leu Ala Glu Lys Ile Pro Gln Ser Gln 385 390 400	1200
tat gat gtt gtg agt gat cat gtt agc aaa gtt act ttt ttc aat ctg Tyr Asp Val Val Ser Asp His Val Ser Lys Val Thr Phe Phe Asn Leu 405 410 415	1248
aat gaa acc aaa cct cga gga aag ttt acc tat gat gca gtg tac tgc Asn Glu Thr Lys Pro Arg Gly Lys Phe Thr Tyr Asp Ala Val Tyr Cys 420 425 430	1296
tgc aat gaa cat gaa tgc cat cat cgc tat gct gaa tta tat gtg att Cys Asn Glu His Glu Cys His His Arg Tyr Ala Glu Leu Tyr Val Ile 435 440 445	1344
gat gtc aat atc aat atc tca tgt gaa act gat ggg tac tta act aaa Asp Val Asn Ile Asn Ile Ser Cys Glu Thr Asp Gly Tyr Leu Thr Lys 450 455 460	1392
atg act tgc aga tgg tca acc agt aca atc cag tca ctt gcg gaa agc Met Thr Cys Arg Trp Ser Thr Ser Thr Ile Gln Ser Leu Ala Glu Ser 465 470 475 480	1440
act ttg caa ttg agg tat cat agg agc agc ctt tac tgt tct gat att Thr Leu Gln Leu Arg Tyr His Arg Ser Ser Leu Tyr Cys Ser Asp Ile 485 490 495	1488
cca tct att cat ccc ata tct gag ccc aaa gat tgc tat ttg cag agt Pro Ser Ile His Pro Ile Ser Glu Pro Lys Asp Cys Tyr Leu Gln Ser 500 505 510	1536
gat ggt ttt tat gaa tgc att ttc cag cca atc ttc cta tta tct ggc Asp Gly Phe Tyr Glu Cys Ile Phe Gln Pro Ile Phe Leu Leu Ser Gly 515 520 525	1584
tac aca atg tgg att agg atc aat cac tct cta ggt tca ctt gac tct Tyr Thr Met Trp Ile Arg Ile Asn His Ser Leu Gly Ser Leu Asp Ser 530 535 540	1632



FRAV20030005 US NP Sequence Listing.txt

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tcc	agt	gtg	aaa	gca	gaa	att	act	ata	aac	att	gga	tta	ttg	aaa	ata	1728
Ser	Ser	Val	Lys	Ala	Glu	Ile	Thr	Ile	Asn	Ile	Gly	Leu	Leu	Lys	Ile	
				565					570					575		
tct	tgg	gaa	aag	cca	gtc	ttt	cca	gag	aat	aac	ctt	caa	ttc	cag	att	1776
Ser	Trp	Glu	Lys	Pro	Val	Phe	Pro	Glu	Asn	Asn	Leu	Gln	Phe	Gln	Ile	
			580					585					590			
cgc	tat	ggt	tta	agt	gga	aaa	gaa	gta	caa	tgg	aag	atg	tat	gag	gtt	1824
Arg	Tyr	Gly	Leu	Ser	Gly	Lys	Glu	Val	Gln	Trp	Lys	Met	Tyr	Glu	Val	
		595					600					605				
tat	gat	gca	aaa	tca	aaa	tct	gtc	agt	ctc	cca	gtt	cca	gac	ttg	tgt	1872
Tyr	Asp	Ala	Lys	Ser	Lys	Ser	Val	Ser	Leu	Pro	Val	Pro	Asp	Leu	Cys	
	610					615					620					
gca	gtc	tat	gct	gtt	cag	gtg	cgc	tgt	aag	agg	cta	gat	gga	ctg	gga	1920
Ala	Val	Tyr	Ala	Val	Gln	Val	Arg	Cys	Lys	Arg	Leu	Asp	Gly	Leu	Gly	
625					630					635					640	
tat	tgg	agt	aat	tgg	agc	aat	cca	gcc	tac	aca	gtt	gtc	atg	gat	ata	1968
Tyr	Trp	Ser	Asn	Trp	Ser	Asn	Pro	Ala	Tyr	Thr	Val	Val	Met	Asp	Ile	
				645					650					655		
aaa	gtt	cct	atg	aga	gga	cct	gaa	ttt	tgg	aga	ata	att	aat	gga	gat	2016
Lys	Val	Pro	Met	Arg	Gly	Pro	Glu	Phe	Trp	Arg	Ile	Ile	Asn	Gly	Asp	
			660					665					670			
act	atg	aaa	aag	gag	aaa	aat	gtc	act	tta	ctt	tgg	aag	ccc	ctg	atg	2064
Thr	Met	Lys	Lys	Glu	Lys	Asn	Val	Thr	Leu	Leu	Trp	Lys	Pro	Leu	Met	
		675					680					685				
aaa	aat	gac	tca	ttg	tgc	agt	gtt	cag	aga	tat	gtg	ata	aac	cat	cat	2112
Lys	Asn	Asp	Ser	Leu	Cys	Ser	Val	Gln	Arg	Tyr	Val	Ile	Asn	His	His	
		690				695					700					
act	tcc	tgc	aat	gga	aca	tgg	tca	gaa	gat	gtg	gga	aat	cac	acg	aaa	2160
Thr	Ser	Cys	Asn	Gly	Thr	Trp	Ser	Glu	Asp	Val	Gly	Asn	His	Thr	Lys	
705					710					715					720	
ttc	act	ttc	ctg	tgg	aca	gag	caa	gca	cat	act	gtt	acg	gtt	ctg	gcc	2208
Phe	Thr	Phe	Leu	Trp	Thr	Glu	Gln	Ala	His	Thr	Val	Thr	Val	Leu	Ala	
				725					730					735		
atc	aat	tca	att	ggt	gct	tct	gtt	gca	aat	ttt	aat	tta	acc	ttt	tca	2256
Ile	Asn	Ser	Ile	Gly	Ala	Ser	Val	Ala	Asn	Phe	Asn	Leu	Thr	Phe	Ser	
			740					745					750			
tgg	cct	atg	agc	aaa	gta	aat	atc	gtg	cag	tca	ctc	agt	gct	tat	cct	2304
Trp	Pro	Met	Ser	Lys	Val	Asn	Ile	Val	Gln	Ser	Leu	Ser	Ala	Tyr	Pro	
		755					760					765				
tta	aac	agc	agt	tgt	gtg	att	gtt	tcc	tgg	ata	cta	tca	ccc	agt	gat	2352
Leu	Asn	Ser	Ser	Cys	Val	Ile	Val	Ser	Trp	Ile	Leu	Ser	Pro	Ser	Asp	
		770				775					780					
tac	aag	cta	atg	tat	ttt	att	att	gag	tgg	aaa	aat	ctt	aat	gaa	gat	2400
Tyr	Lys	Leu	Met	Tyr	Phe	Ile	Ile	Glu	Trp	Lys	Asn	Leu	Asn	Glu	Asp	

## FRAV20030005 US NP Sequence Listing.txt

785	790	795	800	
ggt gaa ata aaa tgg ctt aga atc tct tca tct gtt aag aag tat tat				2448
Gly Glu Ile Lys Trp	Leu Arg Ile Ser	Ser Ser Val Lys Lys	Tyr Tyr	
	805	810	815	
atc cat gat cat ttt atc ccc att gag aag tac cag ttc agt ctt tac				2496
Ile His Asp His Phe Ile Pro Ile	Glu Lys Tyr Gln Phe	Ser Leu Tyr		
	820	825	830	
cca ata ttt atg gaa gga gtg gga aaa cca aag ata att aat agt ttc				2544
Pro Ile Phe Met Glu Gly Val Gly Lys Pro Lys Ile Ile Asn Ser Phe				
	835	840	845	
act caa gat gat att gaa aaa cac cag agt gat gca ggt tta tat gta				2592
Thr Gln Asp Asp Ile Glu Lys His Gln Ser Asp Ala Gly Leu Tyr Val				
	850	855	860	
att gtg cca gta att att tcc tct tcc atc tta ttg ctt gga aca tta				2640
Ile Val Pro Val Ile Ile Ser Ser Ile Leu Leu Leu Gly Thr Leu				
	865	870	875	
tta ata tca cac caa aga atg aaa aag cta ttt tgg gaa gat gtt ccg				2688
Leu Ile Ser His Gln Arg Met Lys Lys Leu Phe Trp Glu Asp Val Pro				
	885	890	895	
aac ccc aag aat tgt tcc tgg gca caa gga ctt aat ttt cag aag aga				2736
Asn Pro Lys Asn Cys Ser Trp Ala Gln Gly Leu Asn Phe Gln Lys Arg				
	900	905	910	
acg gac att ctg gat cca ccg gtc gcc acc atg gtg agc aag ggc gag				2784
Thr Asp Ile Leu Asp Pro Pro Val Ala Thr Met Val Ser Lys Gly Glu				
	915	920	925	
gag ctg ttc acc ggg gtg gtg ccc atc ctg gtc gag ctg gac ggc gac				2832
Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val Glu Leu Asp Gly Asp				
	930	935	940	
gta aac ggc cac aag ttc agc gtg tcc ggc gag ggc gag ggc gat gcc				2880
Val Asn Gly His Lys Phe Ser Val Ser Gly Glu Gly Glu Gly Asp Ala				
	945	950	955	
acc tac ggc aag ctg acc ctg aag ttc atc tgc acc acc ggc aag ctg				2928
Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu				
	965	970	975	
ccc gtg ccc tgg ccc acc ctc gtg acc acc ttc ggc tac ggc gtg cag				2976
Pro Val Pro Trp Pro Thr Leu Val Thr Phe Gly Tyr Gly Val Gln				
	980	985	990	
tgc ttc gcc cgc tac ccc gac cac atg cgc cag cac gac ttc ttc aag				3024
Cys Phe Ala Arg Tyr Pro Asp His Met Arg Gln His Asp Phe Phe Lys				
	995	1000	1005	
tcc gcc atg ccc gaa ggc tac gtc cag gag cgc acc atc ttc ttc				3069
Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg Thr Ile Phe Phe				
	1010	1015	1020	
aag gac gac ggc aac tac aag acc cgc gcc gag gtg aag ttc gag				3114
Lys Asp Lys Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val Lys Phe Glu				
	1025	1030	1035	
ggc gac acc ctg gtg aac cgc atc gag ctg aag ggc atc gac ttc				3159

FRAV20030005 US NP Sequence Listing.txt

Gly	Asp	Thr	Leu	Val	Asn	Arg	Ile	Glu	Leu	Lys	Gly	Ile	Asp	Phe		
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aag	gag	gac	ggc	aac	atc	ctg	ggg	cac	aag	ctg	gag	tac	aac	tac	3204	
Lys	Glu	Asp	Gly	Asn	Ile	Leu	Gly	His	Lys	Leu	Glu	Tyr	Asn	Tyr		
1055						1060					1065					
aac	agc	cac	aac	gtc	tat	atc	atg	gcc	gac	aag	cag	aag	aac	ggc	3249	
Asn	Ser	His	Asn	Val	Tyr	Ile	Met	Ala	Asp	Lys	Gln	Lys	Asn	Gly		
1070						1075					1080					
atc	aag	gtg	aac	ttc	aag	atc	cgc	cac	aac	atc	gag	gac	ggc	agc	3294	
Ile	Lys	Val	Asn	Phe	Lys	Ile	Arg	His	Asn	Ile	Glu	Asp	Gly	Ser		
1085						1090					1095					
gtg	cag	ctc	gcc	gac	cac	tac	cag	cag	aac	acc	ccc	atc	ggc	gac	3339	
Val	Gln	Leu	Ala	Asp	His	Tyr	Gln	Gln	Asn	Thr	Pro	Ile	Gly	Asp		
1100						1105					1110					
ggc	ccc	gtg	ctg	ctg	ccc	gac	aac	cac	tac	ctg	agc	tac	cag	tcc	3384	
Gly	Pro	Val	Leu	Leu	Pro	Asp	Asn	His	Tyr	Leu	Ser	Tyr	Gln	Ser		
1115						1120					1125					
gcc	ctg	agc	aaa	gac	ccc	aac	gag	aag	cgc	gat	cac	atg	gtc	ctg	3429	
Ala	Leu	Ser	Lys	Asp	Pro	Asn	Glu	Lys	Arg	Asp	His	Met	Val	Leu		
1130						1135					1140					
ctg	gag	ttc	gtg	acc	gcc	gcc	ggg	atc	act	ctc	ggc	atg	gac	gag	3474	
Leu	Glu	Phe	Val	Thr	Ala	Ala	Gly	Ile	Thr	Leu	Gly	Met	Asp	Glu		
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ctg	tac	aag	taa												3486	
Leu	Tyr	Lys														
1160																

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<213> Artificial Sequence

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<223> OBR YFP

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1				5					10				15		

Leu Leu Met Leu Phe His Leu Gly Leu Gln Ala Ser Ile Ser Ala Arg  
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20

25

30

Gln Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Thr Arg Tyr Pro Ile  
 35 40 45

Thr Pro Trp Arg Phe Lys Leu Ser Cys Met Pro Pro Asn Ser Thr Tyr  
 50 55 60

Asp Tyr Phe Leu Leu Pro Ala Gly Leu Ser Lys Asn Thr Ser Asn Ser  
 65 70 75 80

Asn Gly His Tyr Glu Thr Ala Val Glu Pro Lys Phe Asn Ser Ser Gly  
 85 90 95

Thr His Phe Ser Asn Leu Ser Lys Thr Thr Phe His Cys Cys Phe Arg  
 100 105 110

Ser Glu Gln Asp Arg Asn Cys Ser Leu Cys Ala Asp Asn Ile Glu Gly  
 115 120 125

Thr Thr Phe Val Ser Thr Val Asn Ser Leu Val Phe Gln Gln Ile Asp  
 130 135 140

Ala Asn Trp Asn Ile Gln Cys Trp Leu Lys Gly Asp Leu Lys Leu Phe  
 145 150 155 160

Ile Cys Tyr Val Glu Ser Leu Phe Lys Asn Leu Phe Arg Asn Tyr Asn  
 165 170 175

Tyr Lys Val His Leu Leu Tyr Val Leu Pro Glu Val Leu Glu Asp Ser  
 180 185 190

Pro Leu Val Pro Gln Lys Gly Ser Phe Gln Met Val His Cys Asn Cys  
 195 200 205

Ser Val His Glu Cys Cys Glu Cys Leu Val Pro Val Pro Thr Ala Lys  
 210 215 220

Leu Asn Asp Thr Leu Leu Met Cys Leu Lys Ile Thr Ser Gly Gly Val  
 225 230 235 240

Ile Phe Arg Ser Pro Leu Met Ser Val Gln Pro Ile Asn Met Val Lys  
 245 250 255

Pro Asp Pro Pro Leu Gly Leu His Met Glu Ile Thr Asp Asp Gly Asn  
 260 265 270

FRAV20030005 US NP Sequence Listing.txt

Leu Lys Ile Ser Trp Ser Ser Pro Pro Leu Val Pro Phe Pro Leu Gln  
275 280 285

Tyr Gln Val Lys Tyr Ser Glu Asn Ser Thr Thr Val Ile Arg Glu Ala  
290 295 300

Asp Lys Ile Val Ser Ala Thr Ser Leu Leu Val Asp Ser Ile Leu Pro  
305 310 315 320

Gly Ser Ser Tyr Glu Val Gln Val Arg Gly Lys Arg Leu Asp Gly Pro  
325 330 335

Gly Ile Trp Ser Asp Trp Ser Thr Pro Arg Val Phe Thr Thr Gln Asp  
340 345 350

Val Ile Tyr Phe Pro Pro Lys Ile Leu Thr Ser Val Gly Ser Asn Val  
355 360 365

Ser Phe His Cys Ile Tyr Lys Lys Glu Asn Lys Ile Val Pro Ser Lys  
370 375 380

Glu Ile Val Trp Trp Met Asn Leu Ala Glu Lys Ile Pro Gln Ser Gln  
385 390 395 400

Tyr Asp Val Val Ser Asp His Val Ser Lys Val Thr Phe Phe Asn Leu  
405 410 415

Asn Glu Thr Lys Pro Arg Gly Lys Phe Thr Tyr Asp Ala Val Tyr Cys  
420 425 430

Cys Asn Glu His Glu Cys His His Arg Tyr Ala Glu Leu Tyr Val Ile  
435 440 445

Asp Val Asn Ile Asn Ile Ser Cys Glu Thr Asp Gly Tyr Leu Thr Lys  
450 455 460

Met Thr Cys Arg Trp Ser Thr Ser Thr Ile Gln Ser Leu Ala Glu Ser  
465 470 475 480

Thr Leu Gln Leu Arg Tyr His Arg Ser Ser Leu Tyr Cys Ser Asp Ile  
485 490 495

Pro Ser Ile His Pro Ile Ser Glu Pro Lys Asp Cys Tyr Leu Gln Ser  
500 505 510

Asp Gly Phe Tyr Glu Cys Ile Phe Gln Pro Ile Phe Leu Leu Ser Gly  
515 520 525

FRAV20030005 US NP Sequence Listing.txt

Tyr Thr Met Trp Ile Arg Ile Asn His Ser Leu Gly Ser Leu Asp Ser  
 530 535 540  
 Pro Pro Thr Cys Val Leu Pro Asp Ser Val Val Lys Pro Leu Pro Pro  
 545 550 555 560  
 Ser Ser Val Lys Ala Glu Ile Thr Ile Asn Ile Gly Leu Leu Lys Ile  
 565 570 575  
 Ser Trp Glu Lys Pro Val Phe Pro Glu Asn Asn Leu Gln Phe Gln Ile  
 580 585 590  
 Arg Tyr Gly Leu Ser Gly Lys Glu Val Gln Trp Lys Met Tyr Glu Val  
 595 600 605  
 Tyr Asp Ala Lys Ser Lys Ser Val Ser Leu Pro Val Pro Asp Leu Cys  
 610 615 620  
 Ala Val Tyr Ala Val Gln Val Arg Cys Lys Arg Leu Asp Gly Leu Gly  
 625 630 635 640  
 Tyr Trp Ser Asn Trp Ser Asn Pro Ala Tyr Thr Val Val Met Asp Ile  
 645 650 655  
 Lys Val Pro Met Arg Gly Pro Glu Phe Trp Arg Ile Ile Asn Gly Asp  
 660 665 670  
 Thr Met Lys Lys Glu Lys Asn Val Thr Leu Leu Trp Lys Pro Leu Met  
 675 680 685  
 Lys Asn Asp Ser Leu Cys Ser Val Gln Arg Tyr Val Ile Asn His His  
 690 695 700  
 Thr Ser Cys Asn Gly Thr Trp Ser Glu Asp Val Gly Asn His Thr Lys  
 705 710 715 720  
 Phe Thr Phe Leu Trp Thr Glu Gln Ala His Thr Val Thr Val Leu Ala  
 725 730 735  
 Ile Asn Ser Ile Gly Ala Ser Val Ala Asn Phe Asn Leu Thr Phe Ser  
 740 745 750  
 Trp Pro Met Ser Lys Val Asn Ile Val Gln Ser Leu Ser Ala Tyr Pro  
 755 760 765  
 Leu Asn Ser Ser Cys Val Ile Val Ser Trp Ile Leu Ser Pro Ser Asp  
 770 775 780

FRAV20030005 US NP Sequence Listing.txt

Tyr Lys Leu Met Tyr Phe Ile Ile Glu Trp Lys Asn Leu Asn Glu Asp  
 785 790 795 800  
 Gly Glu Ile Lys Trp Leu Arg Ile Ser Ser Ser Val Lys Lys Tyr Tyr  
 805 810 815  
 Ile His Asp His Phe Ile Pro Ile Glu Lys Tyr Gln Phe Ser Leu Tyr  
 820 825 830  
 Pro Ile Phe Met Glu Gly Val Gly Lys Pro Lys Ile Ile Asn Ser Phe  
 835 840 845  
 Thr Gln Asp Asp Ile Glu Lys His Gln Ser Asp Ala Gly Leu Tyr Val  
 850 855 860  
 Ile Val Pro Val Ile Ile Ser Ser Ser Ile Leu Leu Leu Gly Thr Leu  
 865 870 875 880  
 Leu Ile Ser His Gln Arg Met Lys Lys Leu Phe Trp Glu Asp Val Pro  
 885 890 895  
 Asn Pro Lys Asn Cys Ser Trp Ala Gln Gly Leu Asn Phe Gln Lys Arg  
 900 905 910  
 Thr Asp Ile Leu Asp Pro Pro Val Ala Thr Met Val Ser Lys Gly Glu  
 915 920 925  
 Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val Glu Leu Asp Gly Asp  
 930 935 940  
 Val Asn Gly His Lys Phe Ser Val Ser Gly Glu Gly Glu Gly Asp Ala  
 945 950 955 960  
 Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu  
 965 970 975  
 Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe Gly Tyr Gly Val Gln  
 980 985 990  
 Cys Phe Ala Arg Tyr Pro Asp His Met Arg Gln His Asp Phe Phe Lys  
 995 1000 1005  
 Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg Thr Ile Phe Phe  
 1010 1015 1020  
 Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val Lys Phe Glu  
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FRAV20030005 US NP Sequence Listing.txt

1025

1030

1035

Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile Asp Phe  
1040 1045 1050

Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn Tyr  
1055 1060 1065

Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly  
1070 1075 1080

Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser  
1085 1090 1095

Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp  
1100 1105 1110

Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Tyr Gln Ser  
1115 1120 1125

Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu  
1130 1135 1140

Leu Glu Phe Val Thr Ala Ala Gly Ile Thr Leu Gly Met Asp Glu  
1145 1150 1155

Leu Tyr Lys  
1160

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<212> DNA

<213> Homo sapiens

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<221> CDS

<222> (1)..(396)

<223>

<400> 15

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Met Ala Gly Ile Lys Ala Leu Ile Ser Leu Ser Phe Gly Gly Ala Ile  
1 5 10 15

48



FRAV20030005 US NP Sequence Listing.txt

gga ctg atg ttt ttg atg ctt gga tgt gcc ctt cca ata tac aac aaa Gly Leu Met Phe Leu Met Leu Gly Cys Ala Leu Pro Ile Tyr Asn Lys 20 25 30	96
tac tgg ccc ctc ttt gtt cta ttt ttt tac atc ctt tca cct att cca Tyr Trp Pro Leu Phe Val Leu Phe Phe Tyr Ile Leu Ser Pro Ile Pro 35 40 45	144
tac tgc ata gca aga aga tta gtg gat gat aca gat gct atg agt aac Tyr Cys Ile Ala Arg Arg Leu Val Asp Asp Thr Asp Ala Met Ser Asn 50 55 60	192
gct tgt aag gaa ctt gcc atc ttt ctt aca acg ggc att gtc gtg tca Ala Cys Lys Glu Leu Ala Ile Phe Leu Thr Thr Gly Ile Val Val Ser 65 70 75 80	240
gct ttt gga ctc cct att gta ttt gcc aga gca cat ctg att gag tgg Ala Phe Gly Leu Pro Ile Val Phe Ala Arg Ala His Leu Ile Glu Trp 85 90 95	288
gga gct tgt gca ctt gtt ctc aca gga aac aca gtc atc ttt gca act Gly Ala Cys Ala Leu Val Leu Thr Gly Asn Thr Val Ile Phe Ala Thr 100 105 110	336
ata cta ggc ttt ttc ttg gtc ttt gga agc aat gac gac ttc agc tgg Ile Leu Gly Phe Phe Leu Val Phe Gly Ser Asn Asp Asp Phe Ser Trp 115 120 125	384
cag cag tgg tga Gln Gln Trp 130	396

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<213> Homo sapiens

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Met Ala Gly Ile Lys Ala Leu Ile Ser Leu Ser Phe Gly Gly Ala Ile  
1 5 10 15

Gly Leu Met Phe Leu Met Leu Gly Cys Ala Leu Pro Ile Tyr Asn Lys  
20 25 30

Tyr Trp Pro Leu Phe Val Leu Phe Phe Tyr Ile Leu Ser Pro Ile Pro  
35 40 45

Tyr Cys Ile Ala Arg Arg Leu Val Asp Asp Thr Asp Ala Met Ser Asn  
50 55 60

Ala Cys Lys Glu Leu Ala Ile Phe Leu Thr Thr Gly Ile Val Val Ser  
Page 42

65

70

75

80

Ala Phe Gly Leu Pro Ile Val Phe Ala Arg Ala His Leu Ile Glu Trp  
                     85                    90                    95

Gly Ala Cys Ala Leu Val Leu Thr Gly Asn Thr Val Ile Phe Ala Thr  
                     100                    105                    110

Ile Leu Gly Phe Phe Leu Val Phe Gly Ser Asn Asp Asp Phe Ser Trp  
                     115                    120                    125

Gln Gln Trp  
           130

&lt;210&gt; 17

&lt;211&gt; 1359

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;223&gt; MY47 LUC

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)..(1359)

&lt;223&gt;

&lt;400&gt; 17

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 Met Ala Gly Ile Lys Ala Leu Ile Ser Leu Ser Phe Gly Gly Ala Ile  
 1                    5                    10                    15

gga ctg atg ttt ttg atg ctt gga tgt gcc ctt cca ata tac aac aaa 96  
 Gly Leu Met Phe Leu Met Leu Gly Cys Ala Leu Pro Ile Tyr Asn Lys  
                     20                    25                    30

tac tgg ccc ctc ttt gtt cta ttt ttt tac atc ctt tca cct att cca 144  
 Tyr Trp Pro Leu Phe Val Leu Phe Phe Tyr Ile Leu Ser Pro Ile Pro  
                     35                    40                    45

tac tgc ata gca aga aga tta gtg gat gat aca gat gct atg agt aac 192  
 Tyr Cys Ile Ala Arg Arg Leu Val Asp Asp Thr Asp Ala Met Ser Asn  
                     50                    55                    60

FRAV20030005 US NP Sequence Listing.txt

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Ala	Cys	Lys	Glu	Leu	Ala	Ile	Phe	Leu	Thr	Thr	Gly	Ile	Val	Val	Ser	
65					70					75					80	
gct	ttt	gga	ctc	cct	att	gta	ttt	gcc	aga	gca	cat	ctg	att	gag	tgg	288
Ala	Phe	Gly	Leu	Pro	Ile	Val	Phe	Ala	Arg	Ala	His	Leu	Ile	Glu	Trp	
				85					90					95		
gga	gct	tgt	gca	ctt	gtt	ctc	aca	gga	aac	aca	gtc	atc	ttt	gca	act	336
Gly	Ala	Cys	Ala	Leu	Val	Leu	Thr	Gly	Asn	Thr	Val	Ile	Phe	Ala	Thr	
			100					105					110			
ata	cta	ggc	ttt	ttc	ttg	gtc	ttt	gga	agc	aat	gac	gac	ttc	agc	tgg	384
Ile	Leu	Gly	Phe	Phe	Leu	Val	Phe	Gly	Ser	Asn	Asp	Asp	Phe	Ser	Trp	
		115					120					125				
cag	cag	tgg	cga	ccg	gtg	gat	cca	ccg	gct	aga	gcc	acc	atg	acc	agc	432
Gln	Gln	Trp	Arg	Pro	Val	Asp	Pro	Pro	Ala	Arg	Ala	Thr	Met	Thr	Ser	
		130				135					140					
aag	gtg	tac	gac	ccc	gag	cag	agg	aag	agg	atg	atc	acc	ggc	ccc	cag	480
Lys	Val	Tyr	Asp	Pro	Glu	Gln	Arg	Lys	Arg	Met	Ile	Thr	Gly	Pro	Gln	
145					150					155					160	
tgg	tgg	gcc	agg	tgc	aag	cag	atg	aac	gtg	ctg	gac	agc	ttc	atc	aac	528
Trp	Trp	Ala	Arg	Cys	Lys	Gln	Met	Asn	Val	Leu	Asp	Ser	Phe	Ile	Asn	
				165					170					175		
tac	tac	gac	agc	gag	aag	cac	gcc	gag	aac	gcc	gtg	atc	ttc	ctg	cac	576
Tyr	Tyr	Asp	Ser	Glu	Lys	His	Ala	Glu	Asn	Ala	Val	Ile	Phe	Leu	His	
			180					185					190			
ggc	aac	gcc	gct	agc	agc	tac	ctg	tgg	agg	cac	gtg	gtg	ccc	cac	atc	624
Gly	Asn	Ala	Ala	Ser	Ser	Tyr	Leu	Trp	Arg	His	Val	Val	Pro	His	Ile	
		195					200					205				
gag	ccc	gtg	gcc	agg	tgc	atc	atc	ccc	gat	ctg	atc	ggc	atg	ggc	aag	672
Glu	Pro	Val	Ala	Arg	Cys	Ile	Ile	Pro	Asp	Leu	Ile	Gly	Met	Gly	Lys	
	210					215					220					
agc	ggc	aag	agc	ggc	aac	ggc	agc	tac	agg	ctg	ctg	gac	cac	tac	aag	720
Ser	Gly	Lys	Ser	Gly	Asn	Gly	Ser	Tyr	Arg	Leu	Leu	Asp	His	Tyr	Lys	
225					230					235					240	
tac	ctg	acc	gcc	tgg	ttc	gag	ctc	ctg	aac	ctg	ccc	aag	aag	atc	atc	768
Tyr	Leu	Thr	Ala	Trp	Phe	Glu	Leu	Leu	Asn	Leu	Pro	Lys	Lys	Ile	Ile	
				245					250					255		
ttc	gtg	ggc	cac	gac	tgg	ggc	gcc	tgc	ctg	gcc	ttc	cac	tac	agc	tac	816
Phe	Val	Gly	His	Asp	Trp	Gly	Ala	Cys	Leu	Ala	Phe	His	Tyr	Ser	Tyr	
			260					265					270			
gag	cac	cag	gac	aag	atc	aag	gcc	atc	gtg	cac	gcc	gag	agc	gtg	gtg	864
Glu	His	Gln	Asp	Lys	Ile	Lys	Ala	Ile	Val	His	Ala	Glu	Ser	Val	Val	
		275					280					285				
gac	gtg	atc	gag	agc	tgg	gac	gag	tgg	cca	gac	atc	gag	gag	gac	atc	912
Asp	Val	Ile	Glu	Ser	Trp	Asp	Glu	Trp	Pro	Asp	Ile	Glu	Glu	Asp	Ile	
	290					295					300					
gcc	ctg	atc	aag	agc	gag	gag	ggc	gag	aag	atg	gtg	ctg	gag	aac	aac	960
Ala	Leu	Ile	Lys	Ser	Glu	Glu	Gly	Glu	Lys	Met	Val	Leu	Glu	Asn	Asn	

## FRAV20030005 US NP Sequence Listing.txt

305	310	315	320	
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Phe Phe Val Glu Thr Met Leu Pro Ser Lys Ile Met Arg Lys Leu Glu	325	330	335	
ccc gag gag ttc gcc gcc tac ctg gag ccc ttc aag gag aag ggc gag				1056
Pro Glu Glu Phe Ala Ala Tyr Leu Glu Pro Phe Lys Glu Lys Gly Glu	340	345	350	
gtg aga aga ccc acc ctg agc tgg ccc aga gag atc ccc ctg gtg aag				1104
Val Arg Arg Pro Thr Leu Ser Trp Pro Arg Glu Ile Pro Leu Val Lys	355	360	365	
ggc ggc aag ccc gac gtg gtg cag atc gtg aga aac tac aac gcc tac				1152
Gly Gly Lys Pro Asp Val Val Gln Ile Val Arg Asn Tyr Asn Ala Tyr	370	375	380	
ctg aga gcc agc gac gac ctg ccc aag atg ttc atc gag agc gac ccc				1200
Leu Arg Ala Ser Asp Asp Leu Pro Lys Met Phe Ile Glu Ser Asp Pro	385	390	395	400
ggc ttc ttc agc aac gcc atc gtg gag ggc gcc aag aag ttc ccc aac				1248
Gly Phe Phe Ser Asn Ala Ile Val Glu Gly Ala Lys Lys Phe Pro Asn	405	410	415	
acc gag ttc gtg aag gtg aag ggc ctg cac ttc agc cag gag gac gcc				1296
Thr Glu Phe Val Lys Val Lys Gly Leu His Phe Ser Gln Glu Asp Ala	420	425	430	
ccc gac gag atg ggc aag tac atc aag agc ttc gtg gag aga gtg ctg				1344
Pro Asp Glu Met Gly Lys Tyr Ile Lys Ser Phe Val Glu Arg Val Leu	435	440	445	
aag aac gag cag taa				1359
Lys Asn Glu Gln	450			

&lt;210&gt; 18

&lt;211&gt; 452

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;223&gt; MY47 LUC

&lt;400&gt; 18

Met	Ala	Gly	Ile	Lys	Ala	Leu	Ile	Ser	Leu	Ser	Phe	Gly	Gly	Ala	Ile
1				5					10					15	

Gly	Leu	Met	Phe	Leu	Met	Leu	Gly	Cys	Ala	Leu	Pro	Ile	Tyr	Asn	Lys
			20					25					30		

FRAV20030005 US NP Sequence Listing.txt

Tyr Trp Pro Leu Phe Val Leu Phe Phe Tyr Ile Leu Ser Pro Ile Pro  
 35 40 45  
 Tyr Cys Ile Ala Arg Arg Leu Val Asp Asp Thr Asp Ala Met Ser Asn  
 50 55 60  
 Ala Cys Lys Glu Leu Ala Ile Phe Leu Thr Thr Gly Ile Val Val Ser  
 65 70 75 80  
 Ala Phe Gly Leu Pro Ile Val Phe Ala Arg Ala His Leu Ile Glu Trp  
 85 90 95  
 Gly Ala Cys Ala Leu Val Leu Thr Gly Asn Thr Val Ile Phe Ala Thr  
 100 105 110  
 Ile Leu Gly Phe Phe Leu Val Phe Gly Ser Asn Asp Asp Phe Ser Trp  
 115 120 125  
 Gln Gln Trp Arg Pro Val Asp Pro Pro Ala Arg Ala Thr Met Thr Ser  
 130 135 140  
 Lys Val Tyr Asp Pro Glu Gln Arg Lys Arg Met Ile Thr Gly Pro Gln  
 145 150 155 160  
 Trp Trp Ala Arg Cys Lys Gln Met Asn Val Leu Asp Ser Phe Ile Asn  
 165 170 175  
 Tyr Tyr Asp Ser Glu Lys His Ala Glu Asn Ala Val Ile Phe Leu His  
 180 185 190  
 Gly Asn Ala Ala Ser Ser Tyr Leu Trp Arg His Val Val Pro His Ile  
 195 200 205  
 Glu Pro Val Ala Arg Cys Ile Ile Pro Asp Leu Ile Gly Met Gly Lys  
 210 215 220  
 Ser Gly Lys Ser Gly Asn Gly Ser Tyr Arg Leu Leu Asp His Tyr Lys  
 225 230 235 240  
 Tyr Leu Thr Ala Trp Phe Glu Leu Leu Asn Leu Pro Lys Lys Ile Ile  
 245 250 255  
 Phe Val Gly His Asp Trp Gly Ala Cys Leu Ala Phe His Tyr Ser Tyr  
 260 265 270  
 Glu His Gln Asp Lys Ile Lys Ala Ile Val His Ala Glu Ser Val Val  
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FRAV20030005 US NP Sequence Listing.txt

275

280

285

Asp Val Ile Glu Ser Trp Asp Glu Trp Pro Asp Ile Glu Glu Asp Ile  
290 295 300

Ala Leu Ile Lys Ser Glu Glu Gly Glu Lys Met Val Leu Glu Asn Asn  
305 310 315 320

Phe Phe Val Glu Thr Met Leu Pro Ser Lys Ile Met Arg Lys Leu Glu  
325 330 335

Pro Glu Glu Phe Ala Ala Tyr Leu Glu Pro Phe Lys Glu Lys Gly Glu  
340 345 350

Val Arg Arg Pro Thr Leu Ser Trp Pro Arg Glu Ile Pro Leu Val Lys  
355 360 365

Gly Gly Lys Pro Asp Val Val Gln Ile Val Arg Asn Tyr Asn Ala Tyr  
370 375 380

Leu Arg Ala Ser Asp Asp Leu Pro Lys Met Phe Ile Glu Ser Asp Pro  
385 390 395 400

Gly Phe Phe Ser Asn Ala Ile Val Glu Gly Ala Lys Lys Phe Pro Asn  
405 410 415

Thr Glu Phe Val Lys Val Lys Gly Leu His Phe Ser Gln Glu Asp Ala  
420 425 430

Pro Asp Glu Met Gly Lys Tyr Ile Lys Ser Phe Val Glu Arg Val Leu  
435 440 445

Lys Asn Glu Gln  
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<211> 1140

<212> DNA

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FRAV20030005 US NP Sequence Listing.txt

<221> misc\_feature

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<223>

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Met Ala Gly Ile Lys Ala Leu Ile Ser Leu Ser Phe Gly Gly Ala Ile	
1 5 10 15	

gga ctg atg ttt ttg atg ctt gga tgt gcc ctt cca ata tac aac aaa	96
Gly Leu Met Phe Leu Met Leu Gly Cys Ala Leu Pro Ile Tyr Asn Lys	
20 25 30	

tac tgg ccc ctc ttt gtt cta ttt ttt tac atc ctt tca cct att cca	144
Tyr Trp Pro Leu Phe Val Leu Phe Phe Tyr Ile Leu Ser Pro Ile Pro	
35 40 45	

tac tgc ata gca aga aga tta gtg gat gat aca gat gct atg agt aac	192
Tyr Cys Ile Ala Arg Arg Leu Val Asp Asp Thr Asp Ala Met Ser Asn	
50 55 60	

gct tgt aag gaa ctt gcc atc ttt ctt aca acg ggc att gtc gtg tca	240
Ala Cys Lys Glu Leu Ala Ile Phe Leu Thr Thr Gly Ile Val Val Ser	
65 70 75 80	

gct ttt gga ctc cct att gta ttt gcc aga gca cat ctg att gag tgg	288
Ala Phe Gly Leu Pro Ile Val Phe Ala Arg Ala His Leu Ile Glu Trp	
85 90 95	

gga gct tgt gca ctt gtt ctc aca gga aac aca gtc atc ttt gca act	336
Gly Ala Cys Ala Leu Val Leu Thr Gly Asn Thr Val Ile Phe Ala Thr	
100 105 110	

ata cta ggc ttt ttc ttg gtc ttt gga agc aat gac gac ttc agc tgg	384
Ile Leu Gly Phe Phe Leu Val Phe Gly Ser Asn Asp Asp Phe Ser Trp	
115 120 125	

cag cag tgg cga ccg gtg gat cca ccg gtc gcc acc atg gtg agc aag	432
Gln Gln Trp Arg Pro Val Asp Pro Pro Val Ala Thr Met Val Ser Lys	
130 135 140	

ggc gag gag ctg ttc acc ggg gtg gtg ccc atc ctg gtc gag ctg gac	480
Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val Glu Leu Asp	
145 150 155 160	

ggc gac gta aac ggc cac aag ttc agc gtg tcc ggc gag ggc gag ggc	528
Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu Gly Glu Gly	
165 170 175	

gat gcc acc tac ggc aag ctg acc ctg aag ttc atc tgc acc acc ggc	576
Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys Thr Thr Gly	
Page 48	

## FRAV20030005 US NP Sequence Listing.txt

180	185	190	
aag ctg ccc gtg ccc tgg ccc acc ctc gtg acc acc ttc ggc tac ggc Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe Gly Tyr Gly	195	200	205
gtg cag tgc ttc gcc cgc tac ccc gac cac atg cgc cag cac gac ttc Val Gln Cys Phe Ala Arg Tyr Pro Asp His Met Arg Gln His Asp Phe	210	215	220
ttc aag tcc gcc atg ccc gaa ggc tac gtc cag gag cgc acc atc ttc Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg Thr Ile Phe	225	230	235
ttc aag gac gac ggc aac tac aag acc cgc gcc gag gtg aag ttc gag Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val Lys Phe Glu	245	250	255
ggc gac acc ctg gtg aac cgc atc gag ctg aag ggc atc gac ttc aag Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile Asp Phe Lys	260	265	270
gag gac ggc aac atc ctg ggg cac aag ctg gag tac aac tac aac agc Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn Tyr Asn Ser	275	280	285
cac aac gtc tat atc atg gcc gac aag cag aag aac ggc atc aag gtg His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly Ile Lys Val	290	295	300
aac ttc aag atc cgc cac aac atc gag gac ggc agc gtg cag ctc gcc Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val Gln Leu Ala	305	310	315
gac cac tac cag cag aac acc ccc atc ggc gac ggc ccc gtg ctg ctg Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro Val Leu Leu	325	330	335
ccc gac aac cac tac ctg agc tac cag tcc gcc ctg agc aaa gac ccc Pro Asp Asn His Tyr Leu Ser Tyr Gln Ser Ala Leu Ser Lys Asp Pro	340	345	350
aac gag aag cgc gat cac atg gtc ctg ctg gag ttc gtg acc gcc gcc Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val Thr Ala Ala	355	360	365
ggg atc act ctc ggc atg gac gag ctg tac aag taa Gly Ile Thr Leu Gly Met Asp Glu Leu Tyr Lys	370	375	

&lt;210&gt; 20

&lt;211&gt; 379

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;



FRAV20030005 US NP Sequence Listing.txt

<223> MY047 YFP

<220>

<221> misc\_feature

<223> MY47 YFP

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Met Ala Gly Ile Lys Ala Leu Ile Ser Leu Ser Phe Gly Gly Ala Ile  
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Gly Leu Met Phe Leu Met Leu Gly Cys Ala Leu Pro Ile Tyr Asn Lys  
20 25 30

Tyr Trp Pro Leu Phe Val Leu Phe Phe Tyr Ile Leu Ser Pro Ile Pro  
35 40 45

Tyr Cys Ile Ala Arg Arg Leu Val Asp Asp Thr Asp Ala Met Ser Asn  
50 55 60

Ala Cys Lys Glu Leu Ala Ile Phe Leu Thr Thr Gly Ile Val Val Ser  
65 70 75 80

Ala Phe Gly Leu Pro Ile Val Phe Ala Arg Ala His Leu Ile Glu Trp  
85 90 95

Gly Ala Cys Ala Leu Val Leu Thr Gly Asn Thr Val Ile Phe Ala Thr  
100 105 110

Ile Leu Gly Phe Phe Leu Val Phe Gly Ser Asn Asp Asp Phe Ser Trp  
115 120 125

Gln Gln Trp Arg Pro Val Asp Pro Pro Val Ala Thr Met Val Ser Lys  
130 135 140

Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val Glu Leu Asp  
145 150 155 160

Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu Gly Glu Gly  
165 170 175

Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys Thr Thr Gly  
180 185 190

Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe Gly Tyr Gly  
195 200 205

Val Gln Cys Phe Ala Arg Tyr Pro Asp His Met Arg Gln His Asp Phe  
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FRAV20030005 US NP Sequence Listing.txt

210

215

220

Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg Thr Ile Phe  
225 230 235 240

Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val Lys Phe Glu  
245 250 255

Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile Asp Phe Lys  
260 265 270

Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn Tyr Asn Ser  
275 280 285

His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly Ile Lys Val  
290 295 300

Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val Gln Leu Ala  
305 310 315 320

Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro Val Leu Leu  
325 330 335

Pro Asp Asn His Tyr Leu Ser Tyr Gln Ser Ala Leu Ser Lys Asp Pro  
340 345 350

Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val Thr Ala Ala  
355 360 365

Gly Ile Thr Leu Gly Met Asp Glu Leu Tyr Lys  
370 375

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<211> 1114

<212> DNA

<213> Homo sapiens

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ttcgggagac atggcgggcg ttaaagctct cgtggcatta tccttcagtg gggctattgg 120

actgactttt cttatgctgg gatgtgcctt agaggattat ggcgtttact ggcccttatt 180

cgtcctgatt ttccacgcca tctcccccat ccccatcttc attgccaaaa gagtcaccta 240

tgactcagat gcaaccagta gtgcctgtcg ggaactggca tatttcttca ctactggaat 300

FRAV20030005 US NP Sequence Listing.txt

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agcctgcggc cttgtgttgg caggcaatgc agtcattttc cttacaattc aaggggtttt	420
ccttatattt ggaagaggag atgatttttag ctgggagcag tggtagcact ttattctgat	480
tacagtgcac tgaatttctt agaactcata ctatctgtat acatgtgcac atgcggcatt	540
ttactatgaa atttaatatg ctgggttttt taataccttt atatatcatg ttcactttaa	600
gaaagacttc ataagtagga gatgagtttt attctcagca aatagacctg tcaaatttag	660
attatgttac tcaaattatg ttacttgttt ggctgttcat gtagtcacgg tgctctcaga	720
aaatatatta acgcagtctt gtaggcagct gccaccttat gcagtgcac gaaacctttt	780
gcttggggat gtgcttggag aggcagataa cgctgaagca ggcctctcat gacccaggaa	840
ggccgggggtg gatccctctt tgtgtttag tccatgctat taaaagtgtg gcccacagac	900
caagagcctc aacatttcct agagccttat tagaaatgca gaatctgaag cccactctg	960
gacccaggac attttgatga gatccaaagg agttgtatgc acatgaaagt ttgagaagca	1020
tcatcataga gaagtaaaca tcacacccaa cttccttatc tttccagtgg ctaaaccact	1080
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<223> AS01

<400> 22

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<212> DNA

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<223> AS02

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<223> AS03

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<210> 25

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20

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<223> AS10

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atgccagttc ccgacaggca 20

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<223> AS13

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<223> AS15

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FRAV20030005 US NP Sequence Listing.txt 21

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47

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14

<210> 44

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<400> 45

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16

<210> 46

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15

<210> 47

<211> 17

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<400> 47

gatggcatgg actgtgg

17